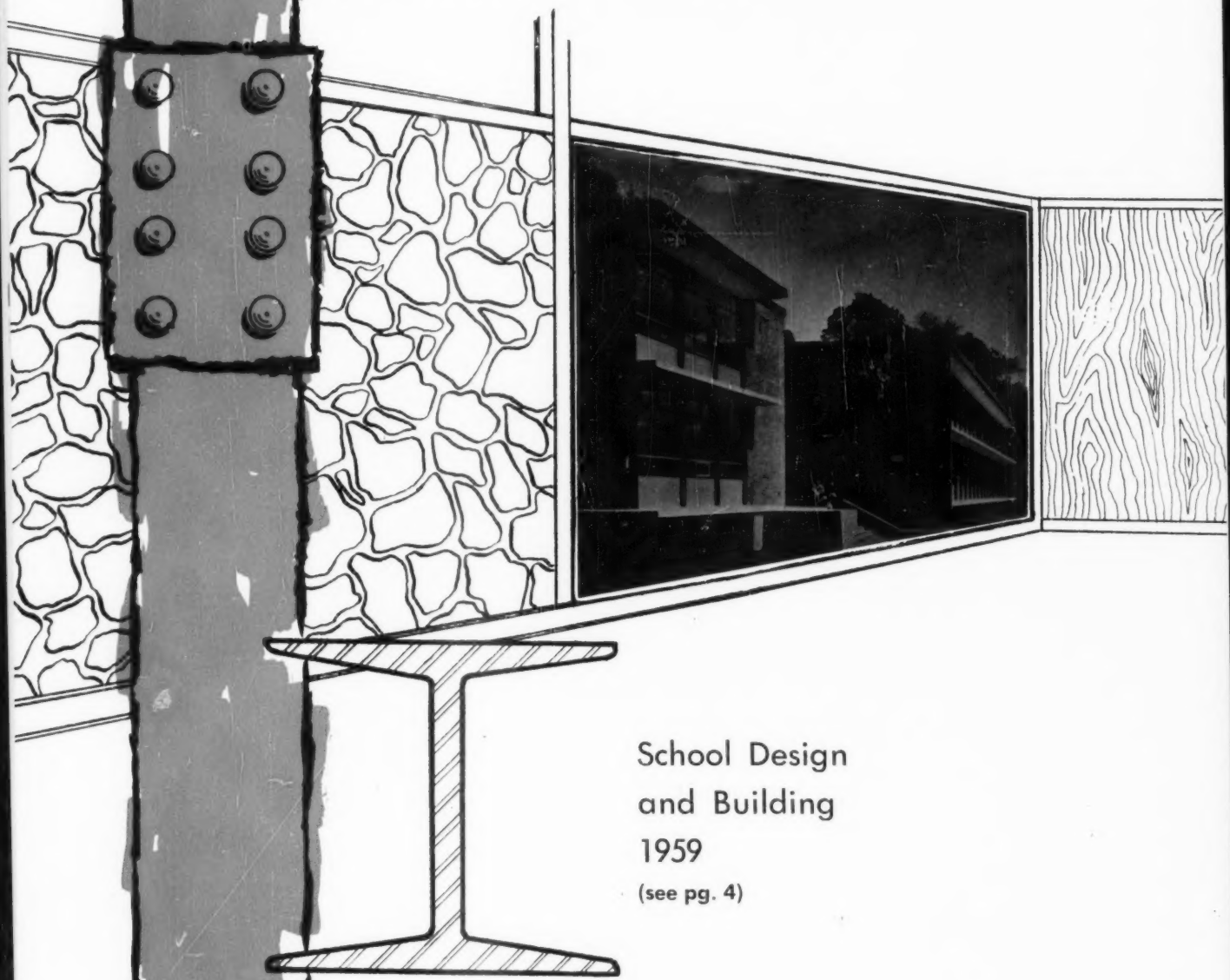
the AMERICAN SCHOOL BOARD JOURNAL

A PERIODICAL OF SCHOOL ADMINISTRATION

JANUARY 1959



School Design
and Building
1959

(see pg. 4)

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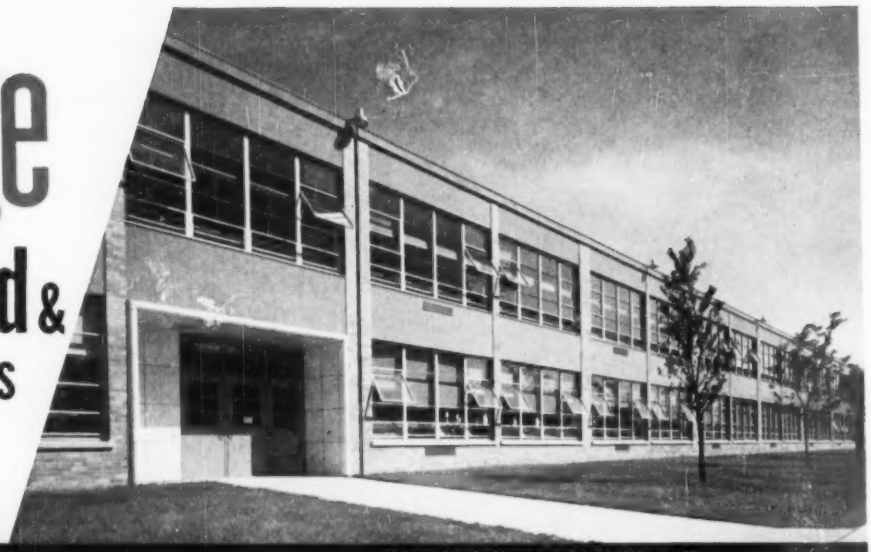
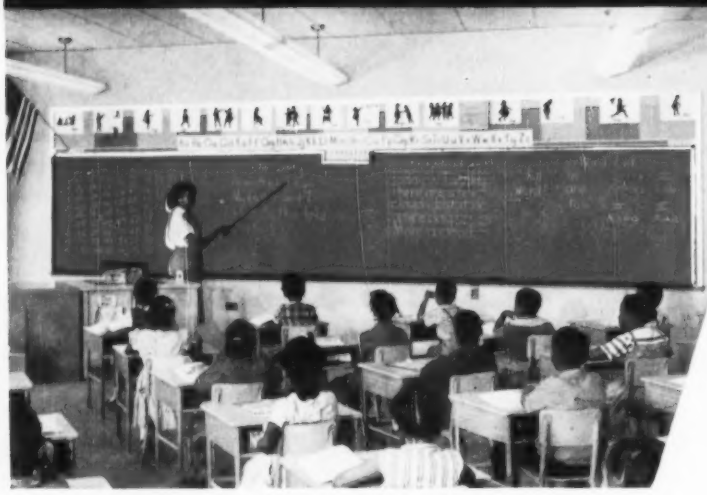


Crispus Attucks Elementary School, Chicago, Ill.
Architects: Fugard, Burt, Wilkinson, and Orth, Chicago, Ill.



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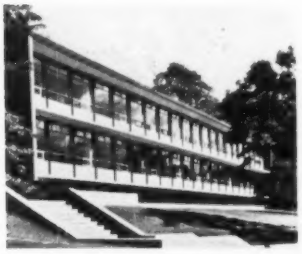
January, 1959

the AMERICAN SCHOOL BOARD JOURNAL



OUR COVER . . .

Dramatically illustrating the clever marriage of wood, steel, glass, and stone in construction of the modern school, the cover features an exterior view of the impressive Sleepy Hollow High Schools which serves the Tarrytowns in New York State (see pg. 20).

A review of your JOURNAL for January (pg. 4) ⟶

WILLIAM C. BRUCE, Editor
Published on the 25th of the month preceeding the date of issue by THE BRUCE PUBLISHING COMPANY, 400 North Broadway, Milwaukee 1, Wisconsin. CENTRAL OFFICE: 20 North Wacker Drive, Chicago 6, Illinois. EASTERN OFFICE: 233 Broadway, New York 7, New York.

Your JOURNAL *for January*

For the 36th consecutive year, your January JOURNAL concentrates on school design and construction.

In this issue this subject is divided into the two general phases of this subject: (1) school construction (pg. 13), and (2) school design (pg. 25). In this second area, we're featuring some "thought areas" which are gaining greater attention among school planners. Among these discussions:

Urban renewal and the schools — Can a new school, in addition to serving its educational function, be located so as to foster a community's urban renewal program? According to the experiences of the York, Pa., school board, the answer is an unqualified *yes!* Read (pg. 33) how this community has co-ordinated its school construction and municipal redevelopment, what results have been achieved, and what values define this novel approach.

Acoustics and school design — "We've used tile in our classrooms and we still don't have good acoustics," a school official relates. The answer to this problem lies in the increasingly important science of acoustics as it relates to school design. We've had an acoustical engineer outline the fundamentals of modern acoustics (pg. 37), and describe what services an acoustical engineer should and can provide.

In reading through your JOURNAL, we also hope you'll have an opportunity to digest several very helpful articles: (1) how to evaluate quality in a school building (pg. 29); (2) how to use the highly efficient departmental approach to plan your new high school (pg. 32); and (3) how to select the best buy in lighting fixtures for your new school (pg. 35).

These are this month's highlights. You'll find, moreover, a dozen other feature articles and departments worthy of your note.

for February...

We're beginning a most important series of three articles on the field of educational television with your February JOURNAL. It's a three-part discussion of the planning, progress, and problems of one of the country's top station: WCET-TV in Cincinnati — and in the series the district's executives answer practically every question you have on how to develop an educational television station.

The Editor

Interested in gymnasium planning? A free copy of the three-part survey, "Planning the High School Gymnasium," which appeared in your JOURNAL for October, 1958, will be sent to you. Use the addressed, postpaid Reader's Service Section (pg. 59) to order your copy!

SUBSCRIPTIONS. In the United States, Possessions, and Canada, $4.00 a year, payable in advance. Two-year subscriptions will be accepted at $6.00. In all foreign countries, $5.00, two years at $8.00. Single copies, 50 cents.

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EDITORIAL MATERIAL. Manuscripts and photographs bearing on school administration, superintendence, school architecture, and related topics are solicited and will be paid for upon publication. Contributions should be mailed to Milwaukee direct and should be accompanied by return postage if unsuitable. The contents of this issue are listed in the "Education Index."

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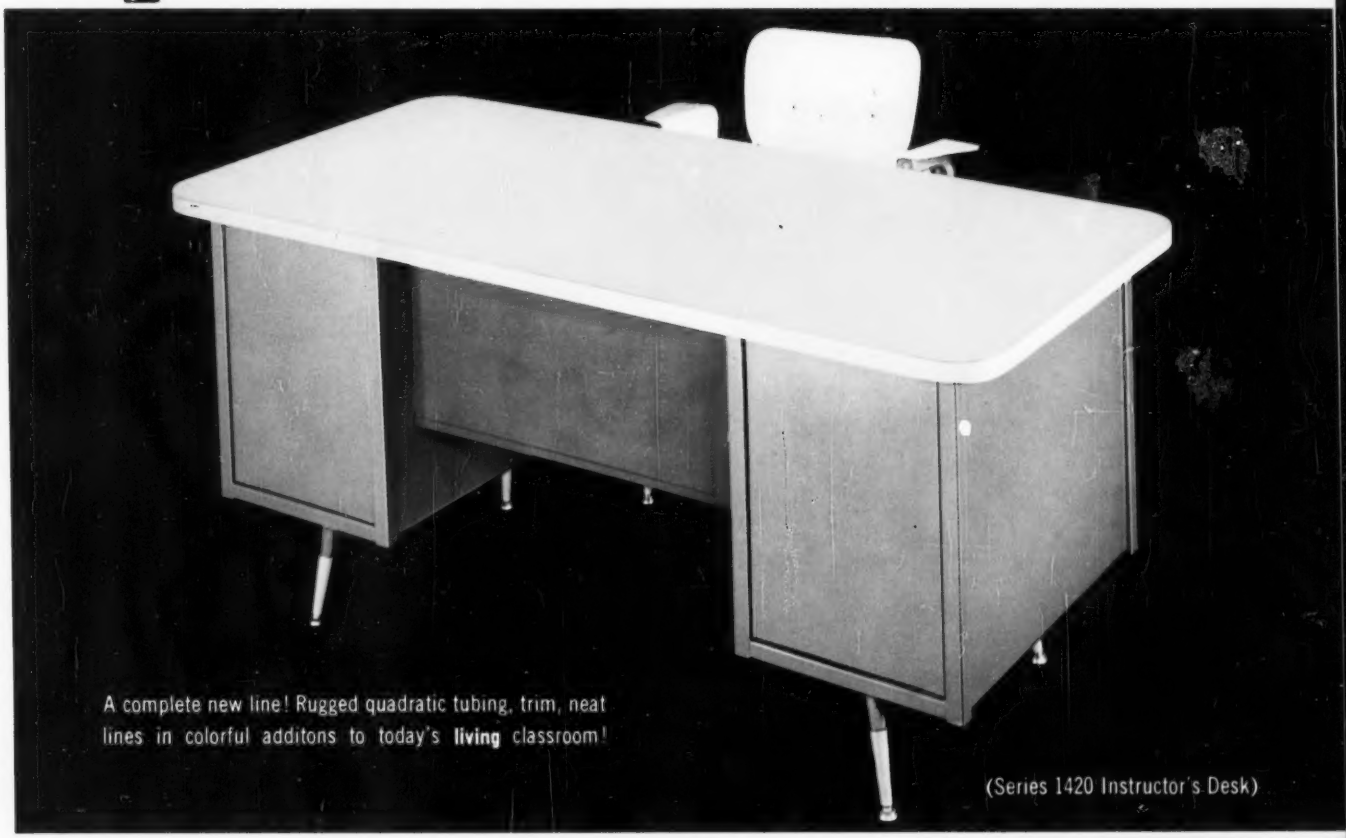

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Surveying the School Scene

CHICAGO SCHOOL DISASTER

The tragic fire in Chicago's Our Lady of the Angels parochial school, which took 92 lives, has caused vigorous inspections of possible fire causes in public and private schools throughout the country. **(For a list of important literature on school fire safety, see pg. 50 of this issue of your JOURNAL. Also, for a frank discussion on school fire causes, read the National Fire Protection Association's article, "Stop School Fires," which appeared in your JOURNAL for November, 1958, pp. 48–49).**

INTEGRATION DEVELOPMENTS

Three candidates for five vacancies on the Little Rock, Ark., school board, who had been opposed by Gov. Orval E. Faubus, were elected recently. This victory was regarded by observers as a protest against Mr. Faubus' action in keeping the four public high schools there closed since September.

- Also in Little Rock, a state judge has blocked payment of almost $20,000 in salary to dismissed superintendent, Virgil T. Blossom. The suit that was filed to restrain the payment claimed collusion between the board and Blossom in "illegal misuse and diversion of public funds."
- Bombings and threats of bombings racked the southern states since the dynamiting of Clinton, Tenn., high school. In Hobbs, N. Mex., a blast wrecked one room in the desegregated Heizer junior high school. A bomb also exploded in the rear of the Orleans, La., Parish school board office.
- Mrs. Charles E. Whitem, a Negro housewife, has been elected a member of the board in Houston, Tex. and Woodford R. Porter has become the first Negro to serve on the Louisville, Ky., board.

1959 CONSTRUCTION OUTLAY

A record $52.3 billion outlay for new construction in 1959 was predicted by the Departments of Commerce and Labor, a 7 per cent rise over the $48.8 billion of 1958. Public expenditures were set at $17 billion, with the largest single item, $6 billion, going for highways. Schools are also predicted to take up a giant share of this public works figure and set a dollars expended record.

OUTGROWS 'EM FASTER'N WE CAN MAKE 'EM

— Milwaukee Sentinel

NEW YORK SCHOOL FEUD

Dr. John J. Theobald, New York Superintendent of schools, has called for an end to the controversy over charges of waste in city school construction. The dispute began when the city's Controller, Lawrence E. Gerosa, accused the board of education of wasting $100 million in school construction funds in the past seven years. The board issued two replies to the charges.

"I believe Larry Gerosa is sincere in his call for economy," Dr. Theobald stated. "I certainly want the most economical administration possible. It is high time we got together."

The board, concerned that the controversy may lead to confusion regarding education and educational needs in the city, believes that the best interests of all will be served by placing the matter before the state education department.

CLEVELAND'S NEW SCHEDULE

A long-range approach to encouraging career teachers through a realigned salary schedule is being considered by the Cleveland, Ohio, board of education. The new schedules are designed to encourage teachers to continue their professional training program, providing for higher salary levels (up to $10,650) over a long period of time (21 years) for "outstanding teachers acquiring approved academic training."

"Since two thirds of the turnover in teachers occur within the first five years after a teacher joins the Cleveland system,

(Concluded on page 54)

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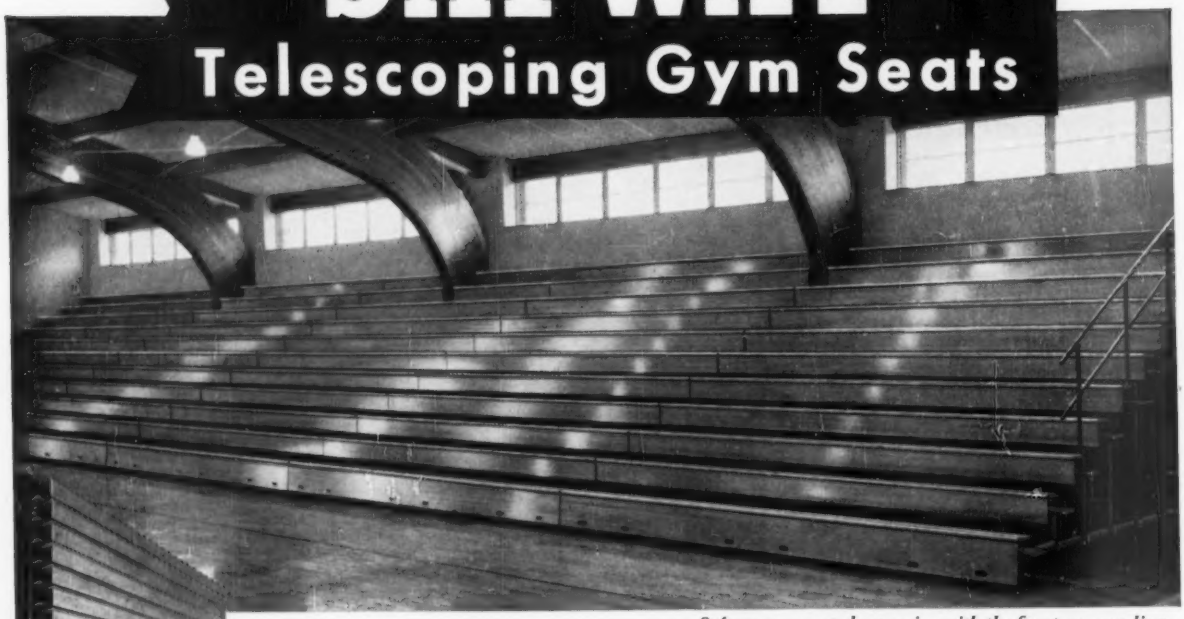

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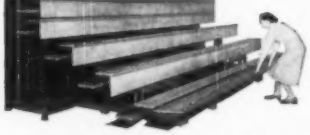

. . . handsome as fine furniture, yet sturdy, safe and trouble-free

YOU'LL really be proud of the appearance of your Safway gym seats . . . proud as you are of the superior vision, comfort and safety they provide for your spectators.

Extended or closed, the all-steel supporting structure is concealed under beautifully finished wood seat boards, foot boards and risers. The handsome natural grain shows through clear varnish, tinted to the rich, warm tone of Golden Oak.

When not in use, Safway gym seats telescope back into a self-contained "cabinet." Riser boards then line up vertically like fine wood panelling to give your gymnasium a clean, finished appearance.

You also benefit through important mechanical advantages built into Safway gym seats:

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Seat, foot and riser boards are laminated Douglas Fir, selected to virtually eliminate cracking or splintering. Boards are carefully sanded and eased on all sides, with corners rounded. There are no sharp projections. Hand holds in the front riser board are smoothly rounded.

For fine appearance and durability, boards are treated with Safway's high quality base sealer and finished in clear Golden Oak varnish. The finish is rich but scuff-resistant . . . lustrous but not slippery . . . easy to keep clean. It will harmonize with the finest surroundings.

COMPLETE SPECTATOR COMFORT — Excellent sight lines from every seat. Extra-wide seat and foot boards; ample foot and leg room.

SMOOTH, EASY OPERATION—Safway telescoping principle eliminates binding, minimizes friction. No costly power equipment needed.

STRONG, RIGID CONSTRUCTION—Steel, not wood, carries the load. 8 steel columns under each section row, with horizontal and vertical steel bracing.

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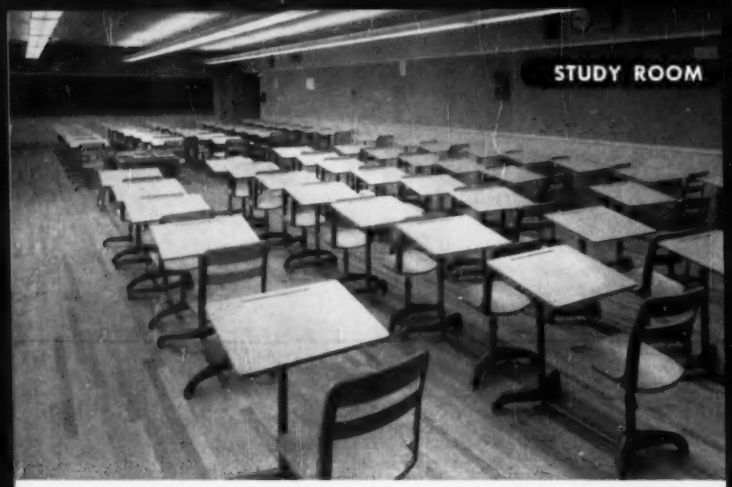
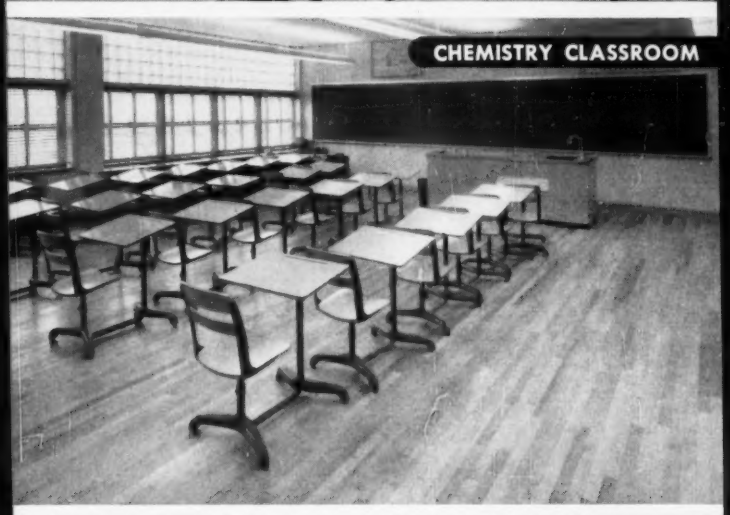
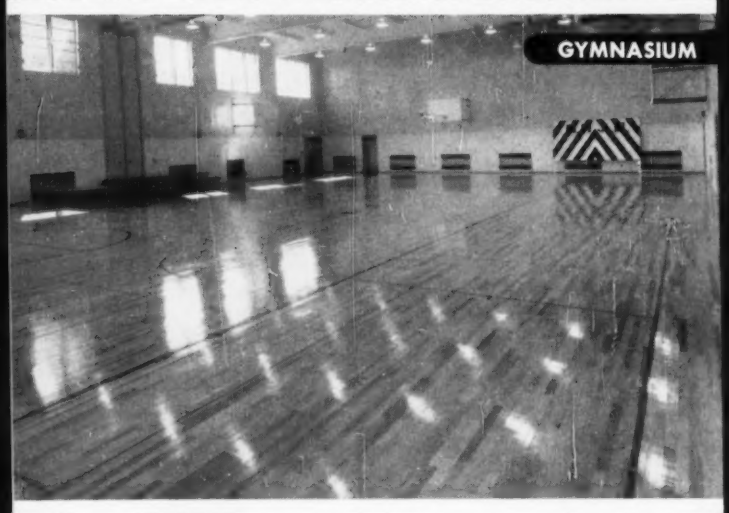
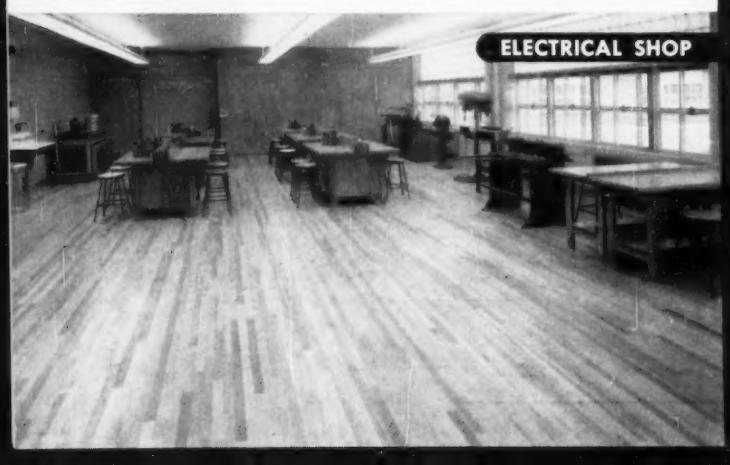


General Contractor, John W. Cowper Co., Inc., Buffalo
Photographs by Duane D. Henry, Buffalo







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where wordless "welcome" softly glows . . . you'll find . . . the finest floor that grows

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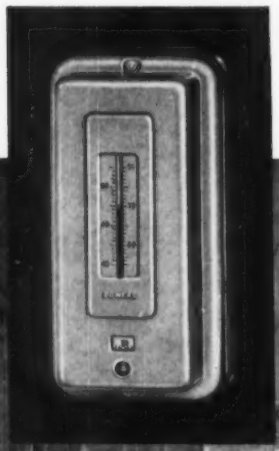

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Convenient spring adjustment for precise sequencing.

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POWERSTROKE Damper Operator gives smooth gradual action of unit ventilator dampers. Accessible adjustment allows sequencing of dampers in accordance with A.S.H.A.E. unit ventilator control cycles.

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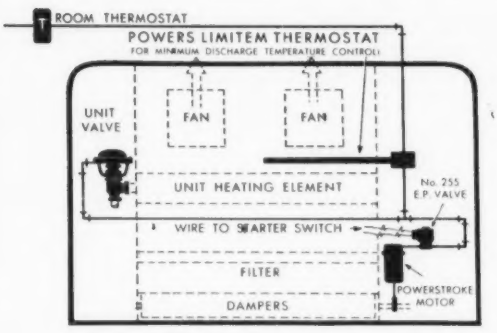
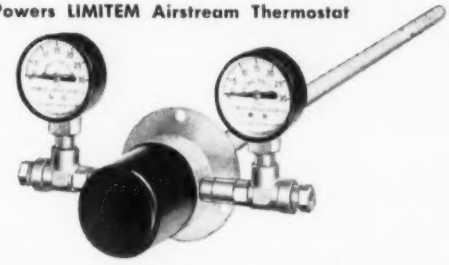


Powers LIMITEM Airstream Thermostat



A precision instrument with calibrated dial and adjustable sensitivity to give precise throttling range.

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Powers LIMITEM Airstream Thermostat with its efficient direct control gives precise regulation of unit ventilator discharge temperature without using complicated auxiliary devices.

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Use Powers 65 years of Experience and engineering know-how to help you select the most efficient type of control for schools or other buildings.

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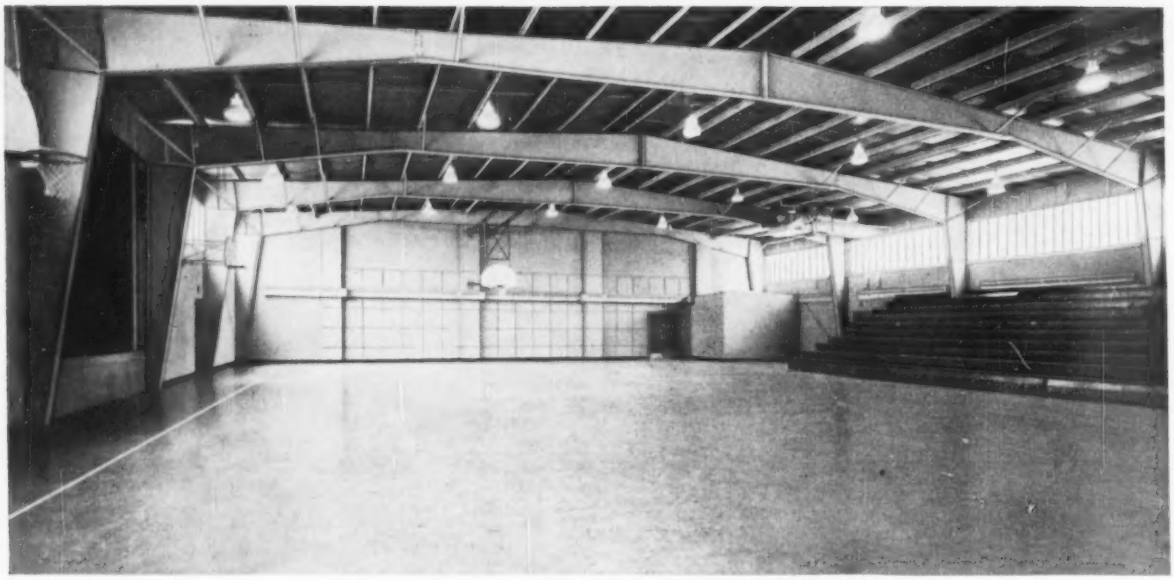

Butler gymnasium for Whitmore Lake School, Whitmore Lake, Michigan.

Many schools which couldn't afford good gyms, now have them—thanks to Butler

As you know, gymnasiums need spacious interiors that are completely free from supporting posts and columns. As you may not know, the construction costs of these wide, clear spans are what usually make the purchase prices of good gyms so high.

You and your group, however, can solve these two problems and build a superior quality gym economically. How? By using the Butler Building System.

The handsome gymnasium above is typical. It was designed around Butler pre-engineered steel frames and a metal roof that can provide clear-span interiors up to 120-feet wide. The components are precision-made on a mass-production basis in a wide range of sizes. They are so perfectly formed that assembly is little more than a bolting job. With the whole building load on the rigid frames, economical curtain walls are used. Result: remarkable savings in construction time, labor, material and engineering costs. And your gym is ready weeks to months sooner.

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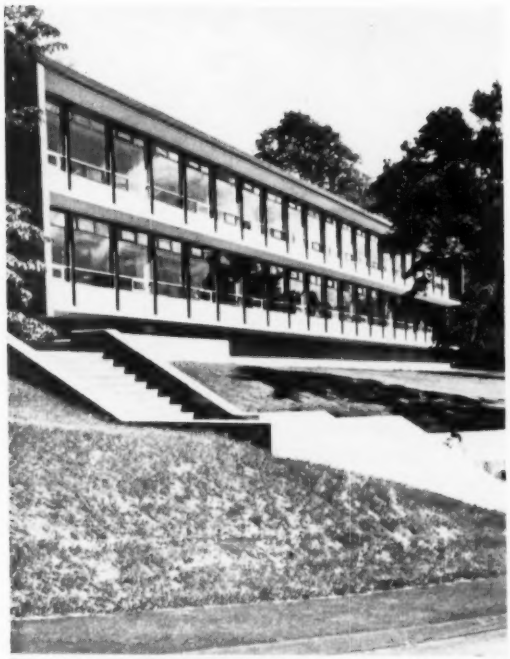
January, 1959

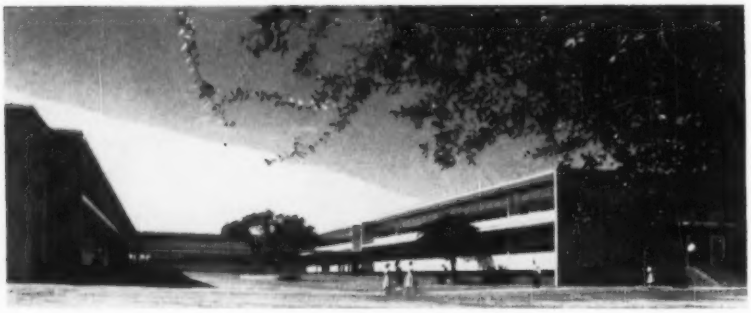
school design and construction | 1959

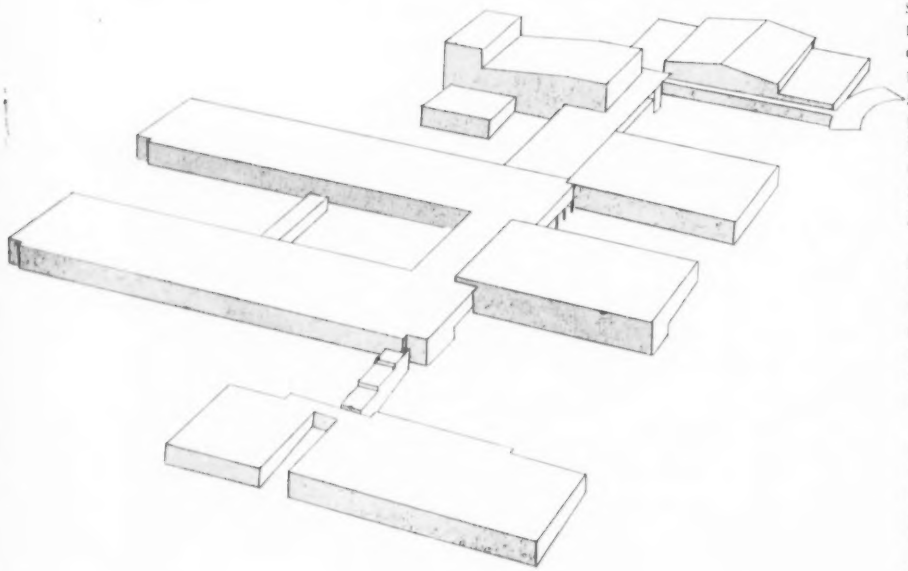


Forecasts for 1959 school construction indicate that, continuing the postwar trend, a vast number of classrooms will be built. Since this coming year will once again see a heavy stress on secondary school construction, we've selected for your inspection three high schools that we believe are outstanding.

Examples of good planning, appropriately modern, and modest in cost for the facilities they provide, the buildings in our annual review include: (1) a large junior-senior plant in Texas, (2) a Wisconsin school for grades 11 and 12, and (3) a comprehensive building in suburban New York . . .

Views of the brick, concrete, and aluminum exterior of the Highlands high school, San Antonio, Tex. Architects of the school were Phelps and Dewees and Simmons, San Antonio. Superintendent there is Thomas B. Portwood.





In July, 1954, San Antonio's superintendent of schools Thomas B. Portwood instructed the director of research to study junior and senior high school needs in the southeastern part of the district. When the capacities and enrollments in each junior school and senior school in the southeastern quadrant of the district were reviewed, the information indicated that these secondary school plants were operating at about 90 per cent capacity, with one junior school over capacity.

The enrollments of the elementary grades were then projected for five years. This revealed that junior schools would be 533 over capacity by 1959, even though construction of homes should be stopped in 1954. Senior schools would also be operating over capacity.

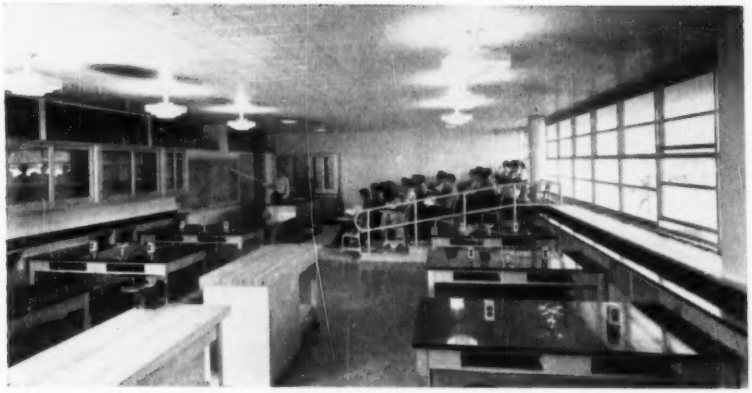
A study was then made to determine the increases in school population caused by new home building. One elementary school alone had increased 42 per cent in one year. A careful check with builders indicated that the construction pace would likely be kept up.

San Antonio's comprehensive junior-senior plant —

The Highlands High School

ERNEST S. RAMBO
Director of Building Planning, San Antonio, Tex., Schools

PHELPS & DEWEES & SIMMONS
Architects, San Antonio, Tex.



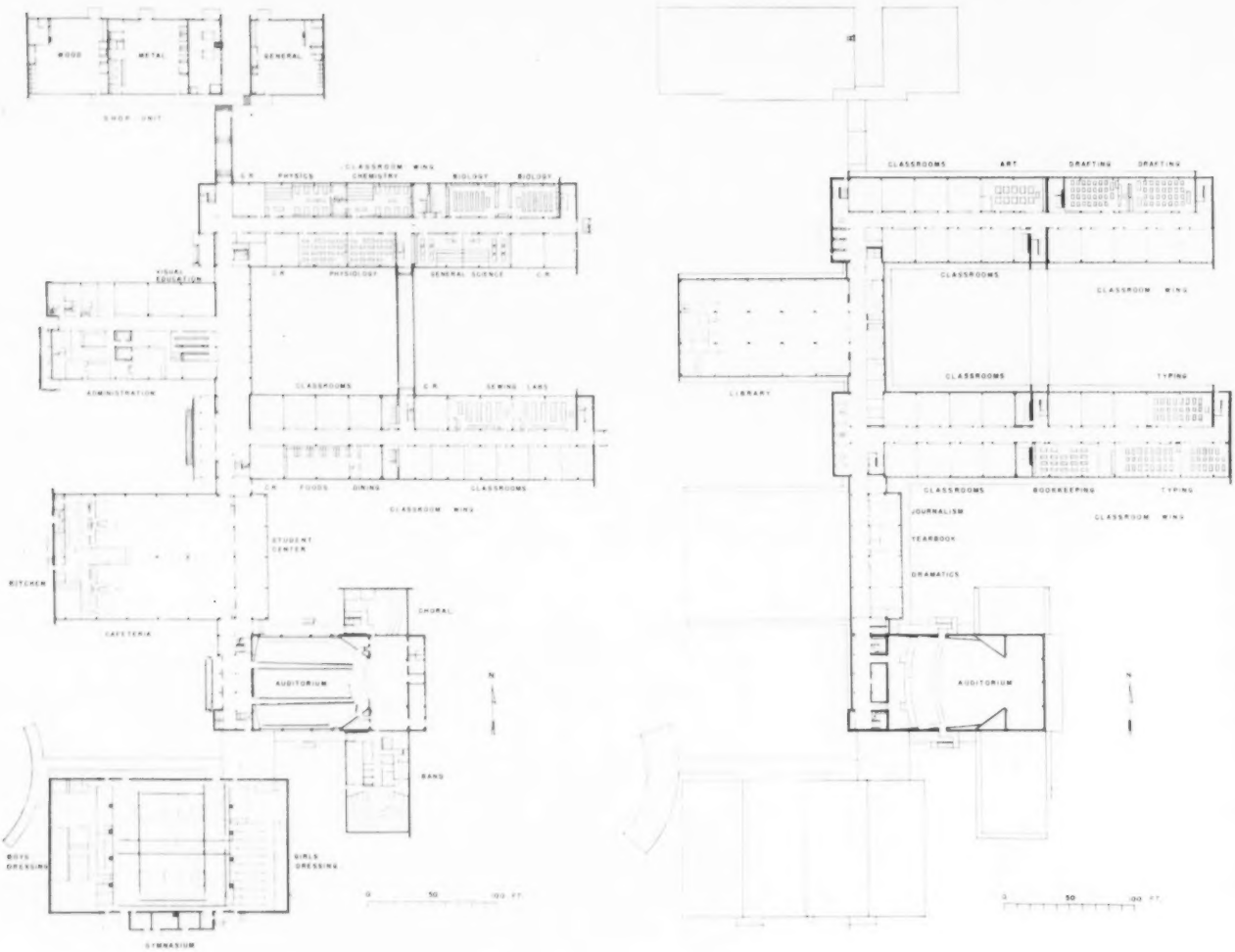
Above: Highlands' perimeter-planned physics laboratory illustrates the risers in the demonstration area. Below: the plant's cross-ventilated and well-lighted library reading room which seats 400 students.

The total study showed that there would be a need for approximately 1000 junior school students and about as many senior school students by 1959. In view of these findings, a recommendation was made to the board of education of the San Antonio Independent School District that a school building should be planned for this area to house 2400 students. It would house both junior and senior students at first but would later house only senior school students.

Site and Facilities

The 25-acre site is on the highest point in the southeastern part of the city and is located adjacent to a 250-acre city park. Expansion possibilities, therefore, are unlimited. Engineers of the city parks department co-operated in landscaping the site and adjoining area.

The plant is composed of 41 regular classrooms, 8 science laboratories, 2 sewing laboratories, 1 foods laboratory, 5 commercial education laboratories, 3



shops, 2 drafting rooms, 1 art laboratory, 1 speech arts room with stage, 1 journalism room with newspaper and yearbook offices, 1 visual education room to seat 100, 1 instrumental music rehearsal room for 120 students plus practice and other auxiliary rooms, 1 choral music rehearsal room for 100 students plus practice and other auxiliary rooms, 1 gymnasium with dressing and shower rooms for 400 students each period.

A complete administrative unit composes six offices, a testing room, conference rooms, work rooms, store rooms, two vaults, clinics for boys and girls, and necessary rest rooms. The library seats 400 students and has conference rooms, an office, a work and stack room, and store rooms. The auditorium seats 1400 and is complete with dressing rooms, store rooms, a work room, and toilets. The cafeteria seats 1000 and is so designed as to make it possible to completely close off the kitchen. It is light and airy and makes an excellent testing room for large groups or it may be used for many other educational purposes. The teachers' dining room, containing serving line, makes an excellent conference room. There is a separate office for the student council. There are numerous and adequate student and teacher rest rooms. The foyers and spacious corridors make excellent gathering places for students between class periods.

This plant was also planned to serve the community. It was constructed by units in such a manner as to make the auditorium, gymnasium, or cafeteria available for use without opening up the entire building. The auditorium or gymnasium may be searately heated. Each contains a complete and independent sound system. The outdoor tennis courts, basketball courts, and other facilities are always available.

The entire structure has a pier and beam foundation. The structural frame is reinforced concrete. The second floor and roof are at plate slabs of reinforced concrete. Most floors are covered with asphalt tile. All ceilings are acoustically treated. Lighting is by concentric ring fixtures which supply, depending on the area, from 40 to 80 foot candles of good quality light; natural lighting is by continuous windows.

Heating is low-pressure steam with continuous radiation. All areas are oriented to take full benefit of north and south light and south ventilation which is best in this geographical area. All corridors, toilets, and shower rooms have seven foot wainscots of ceramic tile. Room walls are plastered and painted with soft colors.

This 2400-student capacity plant contains 198,000 square feet and was built for $2,366,000, including the fees of architects but not including site cost and movable furniture. The total cost of the building is $12 per square foot or about $1,000 per student. ■

Views of a typical "special" classroom, a science laboratory (left) and the spacious library (above).

The Waukesha High School

Community-orientated facilities for grades 11 and 12 —

R. G. HEIN

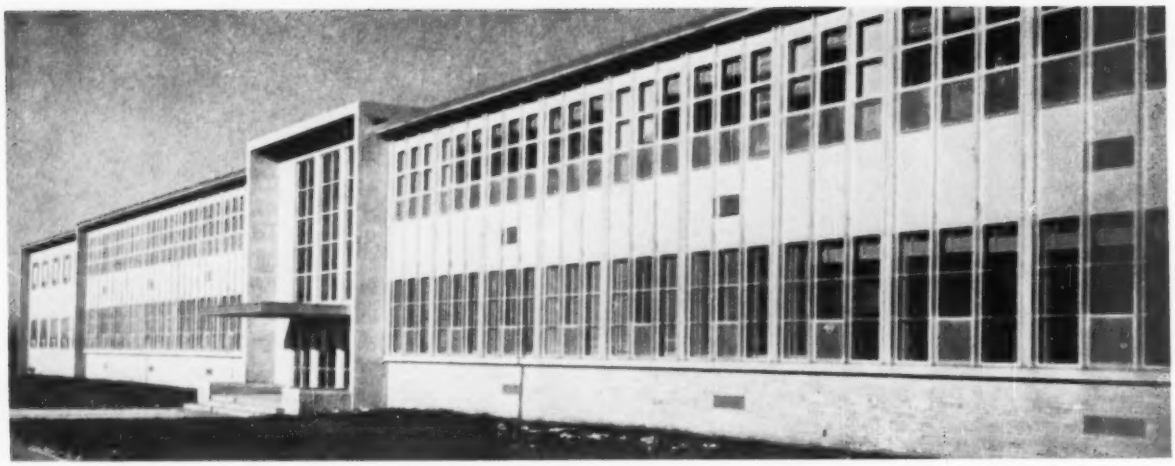
Superintendent, Waukesha, Wis., Schools

Saw-toothed acoustical paneling in the music rooms cuts down sound reverberations as shown above.

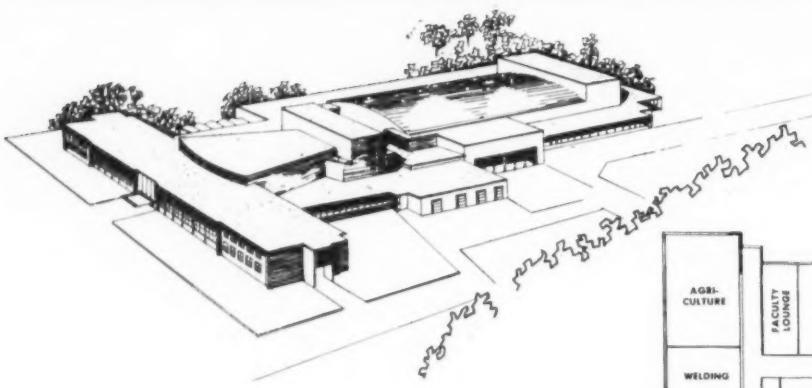
The new Waukesha, Wis., high school provides facilities for a comprehensive curriculum for students in grades 11 and 12. The city's second high school plant now enrolls younger junior and senior high schoolers, permitting greater concentration of instruction at these levels and allowing all of Waukesha's youth two years of attendance at the newer school.

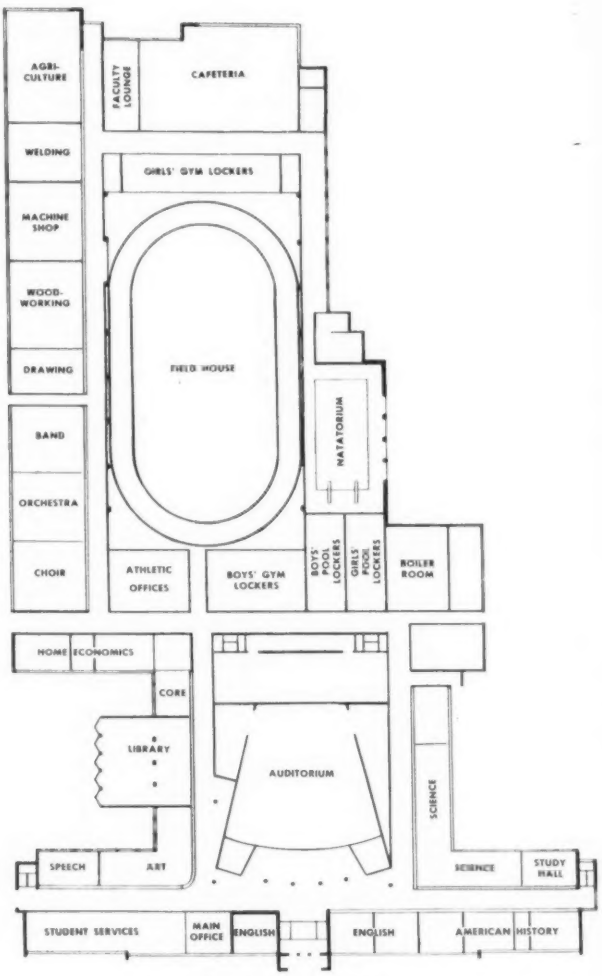
Site for the new plant, selected in 1947 for expansion of Waukesha's high school facilities, consisted of 45 acres; ten of these were used for an elementary school in 1953. The high school building itself, lawns, and driveways occupy approximately eight acres of the 35, allowing ample room for 400-car parking, four softball diamonds, four

A mock stage in the speech-dramatics room provides an ideal rehearsal space.



The front exterior of the Waukesha school — Ebling, Plunkett, and Keymar, architects, Milwaukee, Wisconsin





football fields, seven tennis courts, a track, etc.

Classrooms are planned in five sizes, with 28 by 30 the most basic dimensions. Seven 12 by 24 conference rooms are spaced throughout the building for individual attention to students, as well as a "home" for teachers when their classroom is in use.

The lobby of the auditorium doubles as a student lounge during the day.

Planning the School

The board of education and superintendent of schools served as a center planning committee. All contacts with the architect's office by faculty and citizen's and other committees were made through this committee, expediting planning and minimizing misunderstandings when the building was being constructed.

The Waukesha, Wis., board of education (clockwise): Roy E. Cairns; Reinhard G. Hein, superintendent; Charles M. Gustine; Dr. Martin Werra; Claude M. Hey; Wyn W. Gilham; Mrs. Roselle B. Soulen; Ray Trakel; Mrs. William A. Connell; Miss Norma Larson, secretary; Morgan R. Butler (standing) president.

Community Centered

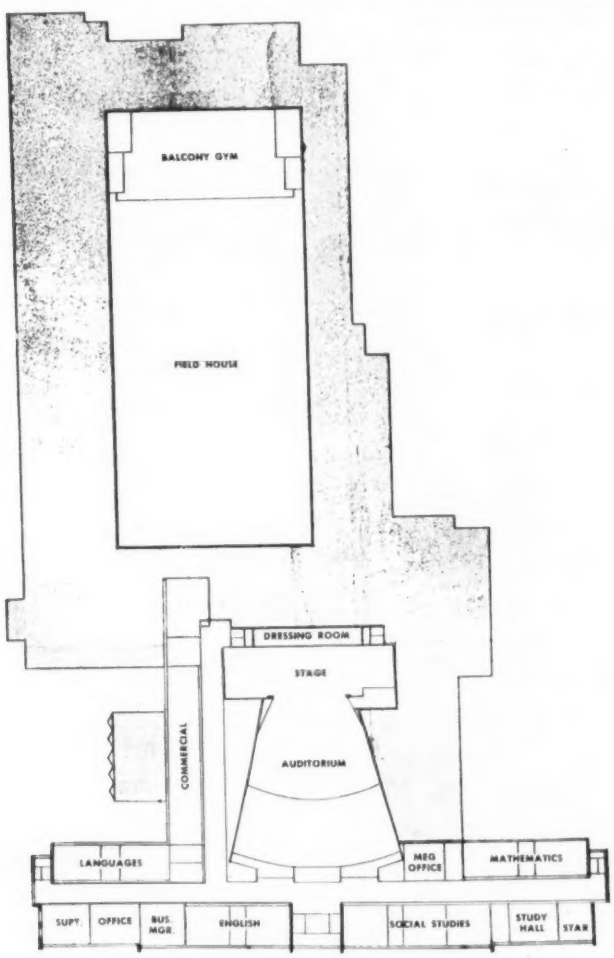
An important aspect of planning the school was its anticipated use for community groups. In fact, Waukesha city's community center planning committee, after reviewing preliminary plans of the school, decided that it served the purpose of a community building and transferred funds to the school board. Three areas especially adapted to community use are the auditorium, the fieldhouse, and the swimming pool:

1. The stadium-type auditorium has a seating capacity of 1200. Its stage, with 3600 square feet of acting space and a "Broadway" model stage control panel, will accommodate any professional presentation, including the Waukesha Symphony orchestra, touring dramatic and musical companies, and local dramatic companies. A special corridor was provided near the stage to enable trucks to drive into the building to unload equipment for the stage.

2. The fieldhouse, 130 by 240 in size, has a 47 by 100 balcony on one end. The basketball court extends across one end of the fieldhouse so the balcony can be used for seating. Using folding gym stands that fold against the balcony wall and the folding bleacher seats, 3500 spectators can be accommodated for basketball games.

Among the major events that have been sponsored in the fieldhouse are the Harlem Globetrotters a city-wide auto show, Guy Lombardo, the boy scout circus, etc.

3. The swimming pool uses double opaque doors opening on one side to permit indoor-outdoor use. It is a regulation six-lane pool construction of steel and has a three-meter diving board. The pool has three 27-foot overhead doors that open into the fieldhouse. Ten rows of bleachers can be swung into these openings for interschool meets.



The Costs

The construction costs of the schools were $3,476,000 and the cost per square foot, including architect's fees, was $16.50. ■

Built for 1000 students of the Tarrytowns, N. Y.,
a comprehensive (83 courses in ten areas) senior high school
with a campus-type design (six compact "buildings")—

The Sleepy Hollow High School

MATTHEW W. GAFFNEY
Superintendent of Schools
The Tarrytowns, N. Y.

Exterior views of the brick and porcelainized steel multi-level Sleepy Hollow high school, Tarrytowns, N. Y.—Perkins and Will, architects, Chicago, Ill., and White Plains, N. Y.

The curriculum for the Sleepy Hollow high school, the Tarrytowns, N. Y., provides a comprehensive high school program to meet the needs of the variety of interests of the students of the community.

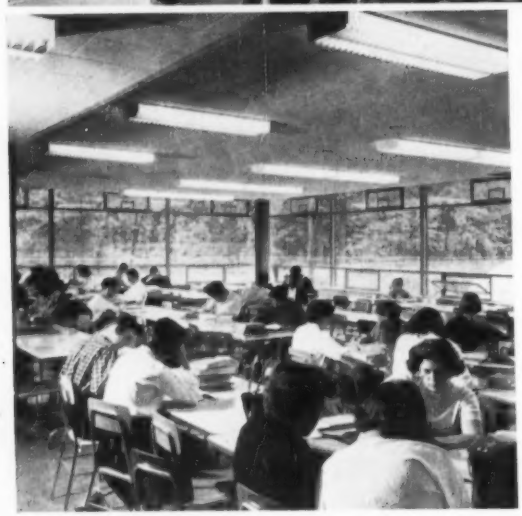
Graduation is achieved after four years of attendance. Three diplomas are granted: (1) the Honors Diploma; (2) Regents High School Diploma; (3) the General Diploma.

Striking in their red brick, blue-green porcelainized steel spandrels and sparkling glass window walls, Sleepy Hollow's six campus-type buildings are a tribute to the public-spirited citizens of the Tarrytowns, their confidence in free public education, and the success of modern school architecture in making effective use of a beautiful, but difficult building site.

Site Orientation

Assembling an adequate high school site in order to serve two villages of limited open area and high land use was a difficult problem. In this case, the difficulty was increased by the presence of an old aqueduct which cuts across the middle of the properties finally acquired. The chosen site fronts a principal north-south thoroughfare. After an abrupt rise to the aqueduct, the property levels off and then rises again to the east and extends northward. The relatively level area in the center of the

Overcoming severe site difficulties, the Sleepy Hollow high school has six "wings" with connecting corridors that separate instructional areas in a compact arrangement.



Above: a typical Sleepy Hollow high school classroom, showing the expansive glazed wall. Left: the bright, airy cafeteria which seats 350.

Fluorescent fixtures which diffuse the artificial lighting in the library means low-glare illumination for easy reading.

site provided a natural setting for the school athletic fields, but required the use of a sloping area for the classroom sections.

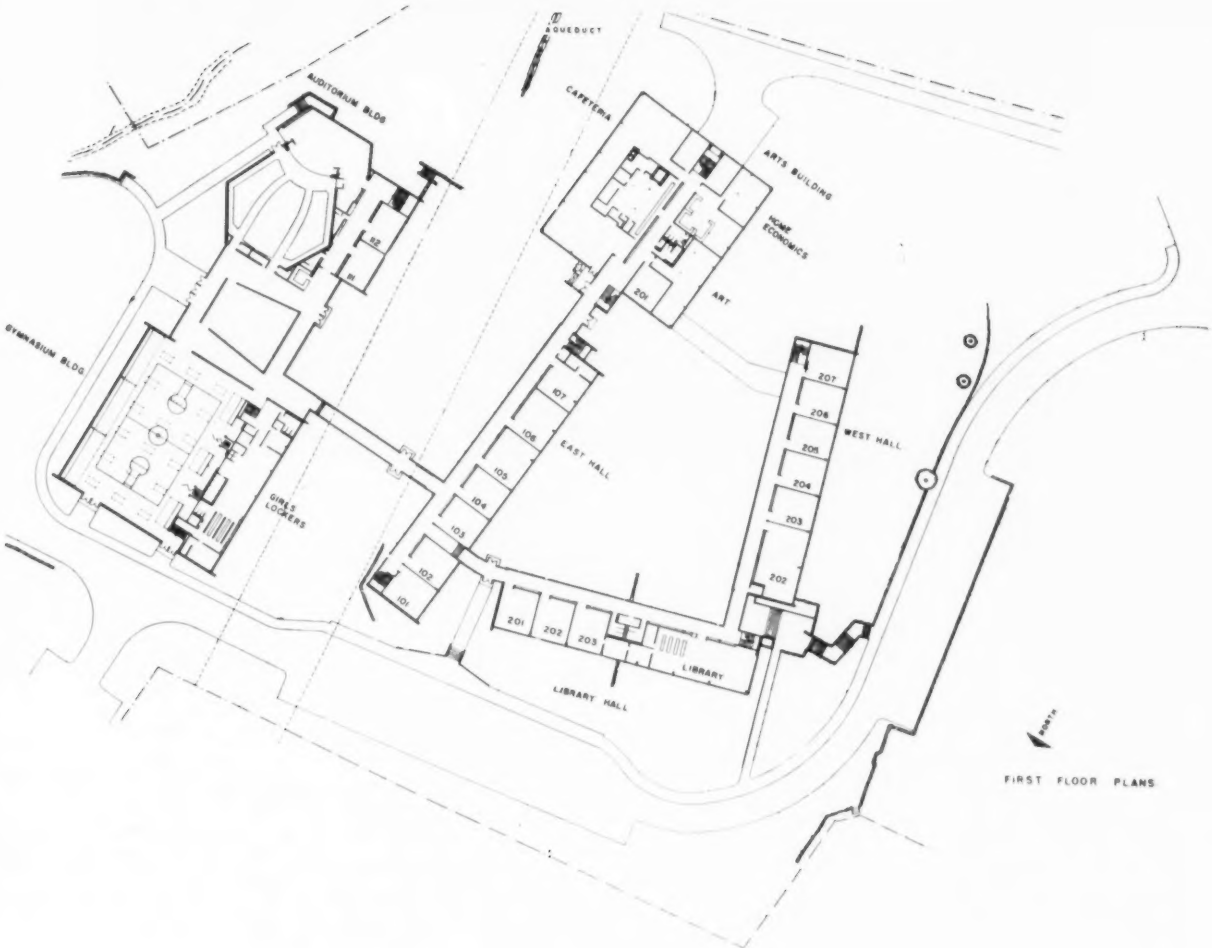
To construct the traditional double-loaded-corridor, multi-story, compact building, would have involved an expensive "cut and fill" operation. The final solution produced four academic units west of the aqueduct, all but one of which have classrooms only on one side of the corridor. The foundations are under the exterior and interior classroom walls, and the corridor is carried by cantilever extensions of the cross beams, again simplifying the foundation requirements. Three of these buildings are placed along the contours. The north building, a story and a half structure, is built across the contours. Each of the classroom buildings is a two-story structure, but, as the land rises, the total rise is three stories. The buildings are connected by enclosed passages at the most suitable level.

The Facilities Provided

The gymnasium and auditorium are placed so that either structure can be used for community purposes, without involving the academic buildings. The gymnasium has a playing court 50 by 80 feet and seating for 1100 spectators. With the bleachers retracted, the instructional use area is 78 by 120 feet divided by two folding doors into three spaces 40 by 78. The locker rooms are "stacked" at the west side of the gymnasium. On the third floor above the locker rooms is a supplementary gymnasium area for group activities, wrestling, dancing, or special gymnastics. Two folding doors provide three spaces 23 by 40 feet. There are no windows in the walls of the gymnasium proper, it being lighted entirely from the top by 18 large translucent plastic skydomes. This method of lighting eliminates the sun glare through side windows which is a serious handicap for daytime use, and instead furnishes an evenly distributed glareless illumination.

The compact, 600-seat auditorium with excellent acoustics and clear sight lines has been designed as a functional part of the instructional program in speech, dramatics, and music. Since an auditorium large enough to accommodate the entire student body would have required a much larger seating capacity at the expense of the more regular use of the building in the instructional program, the choice was made for its teaching possibilities even if it is necessary that some programs be repeated to accommodate both the upper and lower classes. The two classrooms in the auditorium building serve as dressing rooms for dramatics when the interconnecting corridor is closed off. Beneath the stage area is an instrumental music suite complete with storage and rehearsal rooms.

The two-story square structure in the


AQUEDUCT
AUDITORIUM BLDG
CAFETERIA
ARTS BUILDING
HOME ECONOMICS
ART
GYMNASIUM BLDG
GIRLS LOCKERS
EAST HALL
WEST HALL
LIBRARY
LIBRARY HALL
FIRST FLOOR PLANS


AUDITORIUM BLDG
ARTS BUILDING
AUTO SHOP
ELECTRICAL SHOP
WOOD SHOP
WEST HALL
GYMNASIUM BLDG
EXERCISE RMS
EAST HALL
BOYS LOCKERS
GUIDANCE
LIBRARY HALL
SECOND FLOOR PLANS
GROUND FLOOR PLANS

Above: Sleepy Hollow's impressive auditorium seats 580. Left: a view of one of the five science laboratories in the plant, all with perimeter-type labs.

academic area accommodates three industrial-arts shops on the ground floor, the heating and mechanical equipment and the receiving area. The east half of the second floor houses the cafeteria and kitchen. The cafeteria is a beautiful room wrapped around the kitchen, with window walls on three sides. There are two serving lines and a separate dining-room for faculty members. The cafeteria may be divided into three rooms for use as study hall or for public meetings. There is a small snack bar which can be used when the kitchen is closed. The rest of the floor is taken up with home economics, mechanical drawing, and fine arts areas. ■

Reserved for a bright, scenic corner of the "arts" building is the well-lighted, spacious "fine-arts" room of the Sleepy Hollow school.

FACT AND FANCY

in school building economy

There are a number of statements regarding the need for economy and how to achieve economy in planning and constructing school plants which have been repeated so often and so loudly that they are almost universally accepted, if not believed. Yet several of these statements are pure fancy, far removed from or diametrically opposed to facts. At least one of the statements can be properly identified only as a canard — an obvious falsehood, urged upon the unknowing by those who wish to shun responsibility and blame.

Fancy 1. Economy is synonymous with penury.

The fact: Every responsible advocate of economy as it applies to school plants defines it only as *"the elimination of wasteful expenditures* which add nothing to the educational effectiveness of the school plant." Only the unthinking — or the childless — would stand for the stripped-down, barren, unattractive structure which would result if we enclosed and heated space in the most thrifty manner possible.

Fancy 2. The need for school plant economy is a new thing, brought on by the tidal wave of "war babies."

The fact: At least as long ago as 1921, writers were deploring the acute shortage of classrooms and of funds for alleviating the shortage! A research library bibliography listed 63 articles on the subject of economy in the period 1918 through 1949. As long ago as 1919, such panaceas as standardized building plans had their proponents.

"School building costs are becoming unreasonable." . . . "Every school should be 'low cost'" — how much truth is there in these and other common statements concerning school building economy?

HAROLD W. BOLES
Educational Consultant, Newark, Ohio

Fancy 3. Every new school building should be "low cost."

The fact: Many communities can afford and should have more than austerity buildings. If cost were the only criterion for planning new construction, teachers and pupils everywhere in this country would still be gathering in one-room log cabins. Our standard of living would not have soared as it has if schools had not helped raise that standard. The schools cannot raise living standards if classes meet in barns. As Linn has so aptly said:

> . . . I do not advocate all communities attempt to plan only for low cost school buildings. There is a place for the "Cadillac" type of plant, as well as for the "stripped Ford." So long as the nation can afford to buy cars with a lot of useless chrome trim, it can afford to provide reasonably respectable school buildings for the children.[1]

Fancy 4. School building costs are becoming unreasonable.

The fact: School building costs have not risen as rapidly as have other costs — or as has the average individual income. From 1937 to 1957, the cost of school buildings increased 150 per cent. In that same period, the cost of highway construction increased 200 per cent; of automobiles, more than 200 per cent; of buildings in general, 210 per cent; of skilled labor, 220 per cent; of medium-priced, brick residences, 225 per cent; of medium priced frame residences, 228 per cent; and of common labor, 330 per cent![2] During that period, the average per capita disposable income increased 316 per cent (from $551 to $1,745).[3]

Fancy 5. "Low cost" means the same thing everywhere.

The fact: At present, "low cost" means something different in each locality and to each person. In a 1957 survey of 86 school plants in 30 states, unit costs ranged from under $8 per square foot to more than $24 per square foot, and from less than $10 000 per teacher to over $50,000 per teacher. Yet every one of these buildings had been recommended by someone in the state department of education of the state where the building was located as having been built at unusually "low cost."

Fancy 6. The lowest cost school buildings are built in the south.

The fact: The south has no monopoly on economical school

[1] H. H. Linn, "Reducing Costs in School Construction Without Jeopardizing the Curriculum," American School Board Journal (Oct., 1954), p. 74.
[2] "Stretching the School Building Dollar." Pamphlet of the American Association of School Administrators (Washington, 1957), 5 pp.
[3] *The Economic Almanac* (New York: 1958), p. 421.

construction. Of the 86 buildings mentioned above, the 26 showing the lowest *cost per square foot* were distributed as follows: three in New England, two in the east, four in the midwest, four in the plains, four in the west, and nine in the south.

Fancy 7. The multi-story building costs less to construct than does the single story.

The fact: There is insufficient evidence to indicate that either has any clear-cut cost advantage over the other. Economical buildings of both types have been and will continue to be designed and constructed, but site is more often a design determinant than is cost. Boards of education probably place undue restrictions on their architects if they demand a particular type of structure.

Fancy 8. The larger the building, the lower the cost per unit.

The fact: Again, *there is insufficient evidence to warrant any conclusion as to the effect of size on unit costs.* There is a vital need for research in the area.

Fancy 9. Cost comparisons of two or more school buildings have meaning and significance.

The fact: Cost comparisons of any two school buildings are valid and significant only *if:*

a) The same computational formulae are applied to both buildings by the same persons.
b) The two buildings are *exactly* alike in each of many variables, including:
  (1) Date of bidding
  (2) Pupil capacity
  (3) Nature of construction (such as addition to existing building, new building on existing site, or new building on new site)
  (4) Nature of site
  (5) Utilities available
  (6) Type of school district (city, rural, etc.)
  (7) Quality or permanence of the building
c) Several cost levels are considered, including:
  (1) Cost of construction contracts
  (2) Cost of completed plant, including site and site development, architects' and others' fees, change orders, equipment, etc.
  (3) Total capital outlay, including interest on indebtedness

Unless the *total* capital outlay is considered, a district could well have a building *constructed* at low cost and yet have it cost more than it should, over all.

Perhaps the fact in this case can be best seen from an illustration. Here are actual cost data on eight schools, all in the same geographic area and all designed by the same architect, on which bids were received within a few weeks of each other.

School	*Unit Cost, Construction Only*		
	Per Square Foot	*Per Pupil*	*Per Teacher Station*
A	$ 8.09	$ 778	$23,645
B	9.80	891	23,340
C	14.50	424	12,714
D	12.70	602	18,065
E	12.76	548	16,445
F	9.34	438	13,149
G	12.02	563	16,907
H	10.64	1,107	27,683

From this it may be readily seen that School A has the lowest cost per square foot, but closer analysis indicates that it rates only sixth on cost per pupil, and *seventh* on cost per teacher station. School C seems the most economical of the lot if we look at cost per pupil or cost per teacher station, but the square-foot cost on this one is *highest of the eight!* The attempt to compare costs becomes even more absurd when we have the following information:

School A is a hybrid, consisting of a high school gymnasium, locker rooms, toilets, boiler room, storage, stage, lobby, and six elementary classrooms.

School B is a complete new junior high school, but special facilities are oversized, so that student capacity can be increased 50 per cent by the addition of only a few academic classrooms — a rather inexpensive procedure.

School C is a four-classroom unit, having outside access only to classrooms, with no corridor, and only one small toilet in each room.

School D is an all new 12-room elementary school, with central toilets, offices, and multi-purpose room. However, circulation is through the multi-purpose room, so there are no corridors.

School E is a cluster type elementary school, consisting of four four-classroom units (similar to School B), plus a larger fifth unit containing multi-purpose room and offices. Corridors are replaced by sheltered walks.

School F is an addition to an older twelve-year school, and the few services necessary for this addition were already available in the old building.

School G is a classroom wing only of a new elementary school, and it contains eight classrooms, an office suite, and one pair of general toilets on a double-loaded corridor. Classrooms have individual room heaters.

School H is a complete new four year high school, but special facilities are all oversized, so that student capacity can be doubled by the addition of academic classrooms only. This, of necessity, increases the "per pupil" and "per teacher station" cost of this school, although its cost per square foot stands in fourth place.

From the foregoing, it may be seen that *if* we could agree on which unit costs are significant, we still could not compare those unit costs with any real significance unless the buildings were themselves comparable.

Fancy 10. There are "wonder" materials and/or construction procedures which could achieve miraculous savings in school buildings if architects would only use them.

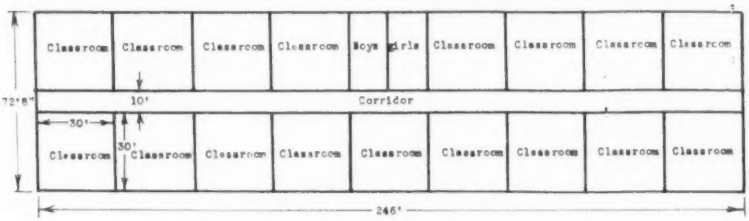
The fact: There is neither one material nor one process, the use of which can achieve any substantial savings.

> . . . There is no one factor that will result in economy of construction or any combination of standard factors that can be arrived at that will produce economical construction. Economy is achieved only through bringing as many favorable facts as possible to play in any one given situation.[4]

[4]Harold Silverthorn, "Factors That Produce Economy in Schoolhouse Construction," *Nation's Schools* (May, 1954), p. 72.

they, in effect, stretch construction funds

Fig. 2. Maximum achievable ratio of educational area to gross area in a 17-classroom school with indoor circulation and eight-inch thick walls.



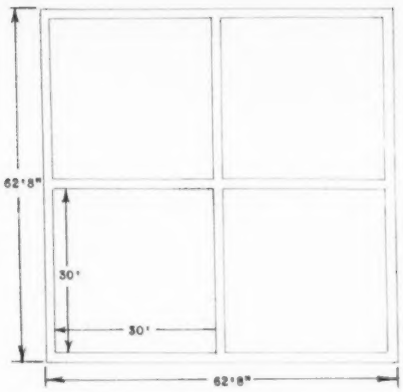


Fig. 1. Maximum achievable ratio of instructional area to gross area.

Fancy 11. Increasing space per pupil increases the educational efficiency of the school.

The fact: No one knows how much space per pupil is needed, in or out of the classroom, for maximum educational effectiveness. This is another area in which true research is urgently needed. We only assume that, if a little is good, more is better. Perhaps we *are* paying for unneeded space in some schoolrooms — no one really knows. "If this be treason . . . ."

the canard

Only the architect has any influence on school plant costs — there is nothing that superintendents and boards of education can do about them.

The fact: There are many factors other than those which concern only construction which affect costs, and board members and superintendents can exercise almost exclusive control over those factors. It is, of course, the responsibility of the board of education to employ an architect and they can very easily employ one whose work indicates that he does not waste funds on useless ornamentation. Beyond that, the board of a district where economy is necessary has a responsibility to make available to the architect the maximum possible funds for construction, and the board members have available to them at least many ways of stretching their dollars. If the board of education takes advantage of one or several of the economies available to them, they, in effect, *stretch* the funds available for construction.

This does not gainsay the statement that the architect is important in squeezing the last possible square inch of space ou of the available construction funds. His function is to get the most and the best, educationally and aesthetically, out of the construction funds which the board of education can allot for the project. The architect has available to him dozens of further economies by means of which he can "squeeze" more and better space from a given sum of money. Even here, the superintendent and the board of education are not helpless. They select the architect, and architectural fees are pretty well standardized, so it costs no more to get an imaginative, cost-conscious man than to employ an unimaginative wastrel.

Fancy 12. Virtually all space in a school building could be inside the walls of the classrooms, thus eliminating a lot of waste space.

The fact: Even if one grants that nothing is needed other than classrooms (which *we* don't), the maximum achievable ratio of instructional area (*i.e.* — area within the classroom walls) to gross area is about 91.7 per cent as illustrated by figure 1. Even cracker-barrel mathematicians known that, next to a circle, a square encloses more area with less perimeter than any other geometric figure. In Figure 1, gross area equals 62 ft. 8 in. by 62 ft. 8 in. equals 3927 and 1/9 sq. ft., and instructional area equals 4 by 30 ft. by 30 ft. equals 3600 sq. ft., then 3600 divided by 3927 equals 91.7 per cent.

If one takes an over-all space of 3 by 4 feet from the area of each classroom for a room toilet (and even the most critical adversaries of school spending would probably vouchsafe the boys and girls this little luxury over the outdoor type), then the instructional area dwindles to 3552 sq. ft. while the gross area remains constant, thus reducing the ratio to 90.2 per cent. If the room size is reduced, the ratio is lowered still further.

If one admits that indoor circulation between classrooms is desirable, and that central indoor toilets are not a "frill," then about the best ratio that can be achieved is shown in figure 2. (In this figure, gross area equals 72 ft. 8 in. by 246 ft. equals 17,876 sq. ft., and instructional area equals 17 by 30 ft. by 30 ft equals 15,300 sq. ft., then 15,300 divided by 17,876 equals 85.6 per cent.

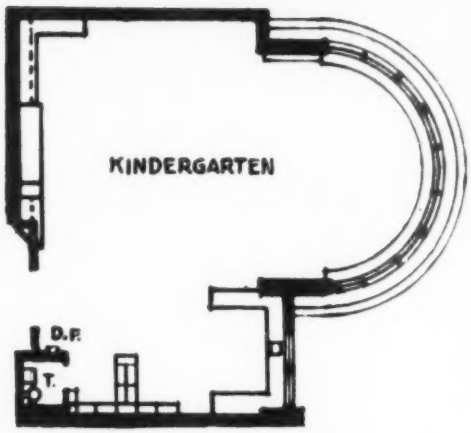
If one concedes that a school as large as that shown in figure 2 needs at least minimum indoor areas for such things as a multi-purpose room, office, stage, kitchen, storage, central heating, etc., and that *some* concessions must be made to aesthetics, then a ratio of 55 per cent of instructional area to gross becomes an efficiency goal rather than an admission of wastefulness.

In Summary

"Every little makes a mickle" — and there are many many "mickles" available to anyone and everyone connected with a school construction program. ■

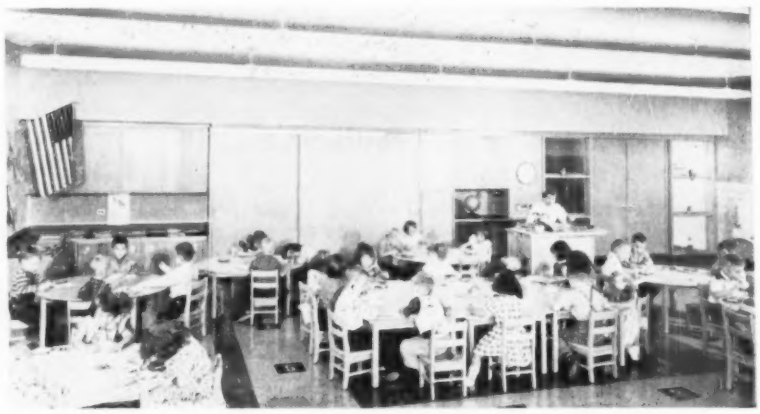
What kindergarten teachers think about —

Kindergarten Design



LEE M. MORRIS
Superintendent of Schools, Cook County
School District No. 152, Harvey, Ill.

— Courtesy Louis N. Balluff



Floor plan and views of the kindergarten of the Sandburg school, Harvey, Ill. — Louis N. Balluff, architect, Chicago, Ill.

If our kindergarten teachers are typical in their ideas about what they want or do not want in the kindergarten classroom, we can be absolutely certain of at least three considerations that enter into kindergarten planning:

1. Don't install more than a minimum of chalkboard space, but give the room more areas on which the children can display their work.
2. Keep the decor simple — staying away from adult-centered decor — and scale to the child.
3. Locate the kindergarten on the ground floor.

Although they were divided on other scores, our kindergarten teachers were unanimously agreed on these points when we took a survey recently re-evaluating their judgments and feelings in regard to architectural features in the kindergarten rooms where they work. In the case of our teachers this was a reappraisal of their opinions on the same matters submitted at the start of our new building program which has resulted in four new schools completed to date, and an administration-kindergarten unit, plus a fifth elementary school under construction in the second phase of the development program.

In all our new schools the kindergartens are as close to ideal as we can possibly plan in accordance with our particular academic needs and neighborhood school system. But it is interesting to note that the kindergarten teachers now reaffirm the practicality of the features they said they wanted after the substantial test of several terms and months of actual use. Their opinions now carry this added weight.

Our new kindergartens are similarly designed with an exception that the kindergarten in the kindergarten-administration unit does not have the bay windows found in the rooms at the four other new buildings.

Size and Facilities

Our kindergartens, we think, are especially attractive rooms, approximately 50 per cent larger than our primary classrooms. This size makes them large enough for rhythmic program activities, permits the teacher to have more than one group active at the same time, etc. They are located in the plan of the buildings away from main pupil traffic at the end of corridors; they are on the ground floor within easy reach of play areas and incorporate an efficient and pleasing balance of glass and wall areas that does not add to maintenance problems. The glass bays extend to a window seat within about a foot of the floor. Kindergarten rooms all have connecting toilet facilities; movable wardrobe space; radiant heated floors and mechanical ventilation. Although we have purposely steered clear of any attempt at a homelike, living room atmosphere in favor of a child-like atmosphere suitable for the first step in integrating the child to school life, our rooms have pleasing color combinations, create a pleasant, friendly environment, and have good scale and proportion.

Cabinets and counters in the rooms are at either teacher-use height or at 2 ft. heights for the youngsters to use. Cabinets are for either special or generalized uses and are sufficient to provide for one year's supplies, making the rooms self-contained units. Built-ins are provided permitting each child a place for his crayons, scissors, and paste. One of our teachers made the suggestion that if there are two kindergarten classes, these storage units should be divided so as to be in different parts of the room, making it easy for either the morning or the afternoon class to find belongings quickly and easily. In all cases wardrobe facilities are portable units, and furnish entirely adequate facilities.

While kindergarten rooms, as other classrooms, should be "tailor-made" to the various needs of each district, our experience might be helpful in evaluating any standard of kindergarten use and furnish certain directions of thought for the administrator and school board contemplating new building programs including kindergartens. ■

How to Evaluate Quality

N. L. GEORGE

Assistant Superintendent, Oklahoma City, Okla., Schools

Many local tax groups and writers of many magazine articles have attacked the high cost of construction of school plants. Within the past two years, these groups and writers have stirred the public in most localities to the point where the voters think that school administrators and boards of education are wasting the tax dollars.

Buildings of low initial cost and high maintenance may provide neither good educational facilities nor sound economy. The "best" planned and constructed buildings give the fullest results in terms of immediate and long-time educational service for the least dollars, good school plants provide real economy.

Quality, the key to good school plants, means a standard of excellence in classes, kinds, or grades. It deals with bulk or mass design, style, or figure, setting and location, usefulness and durability, and attractiveness. Quality, achieved within the planning and construction processes, is a difference which sets off one class of objects from another.

Considering all the major elements in school plant planning and construction necessary in quality determination, these elements include: (1) adequate long-range educational planning; (2) appropriate facilities; (3) architectural creation and planning; (4) choice of basic building materials and the processes of construction; (5) craftsmanship of the builders; (6) material durability and adaptation to local climatic conditions; and (7) attractiveness.

1. Long-Range Educational Planning

The educational administrator has the prime responsibility to study the needs and characteristics of the age groups who will use the proposed plant. It is his added responsibility to describe the curriculum and activities, and the atmosphere and conditions which the school plant should facilitate. Good planning engenders good quality. Poor or no planning practically foments a school plant of low quality. Educational planning may be, in many cases, the weakest link in present-day efforts to obtain quality in school plants.

2. Appropriate Facilities

The educational program must be adequately housed or quality is lacking in the school plant. If there be unneeded space, quality is lacking. If spaces are not suited for use, quality is lacking. Adequacy of space, right kinds of space, and the correct location of spaces are prime determinants of the quality of a building.

3. Architectural Creation and Planning

The educational planner should delegate the task of architectural planning to the qualified architect, who seeks to interpret the educational plan and needs into a design to serve the tasks to be performed. In accomplishing these ends he seeks arrangement of space and materials so that beauty and atmosphere are inevitable. His sole responsibility is to provide this high quality.

4. Choice of Basic Building Materials and Processes Used

Materials are broken into various grades, styles, and form classifications. Shoes, custodians' mops, or paint are made in quality classes. The original cost of a building in part is determined by the kinds of materials used and their quality classification.

The construction processes employed also determine the cost. Money is saved by using locally accessible building materials. Materials of high quality, such as copper plumbing, usually reduce labor time involved in construction. These materials usually have low-maintenance costs and give better results. These results save money and give quality to the structure.

5. Craftsmanship of the Builders

Good workmanship insures good quality and also acts as a guarantee against maintenance trouble and costs. Operation costs are also less. As with residential construction poor craftsmanship results in a botched-up piece of work which, in turn, results in dissatisfaction and usually trouble for the users.

6. Material Durability and Adaptation to Local Climatic Conditions

"Will the materials used last the determined existence of the building?" "Will the construction tasks performed by the craftsmen hold their 'as is constructed' existence the determined service years of the building?" These are the two elements which determine quality.

The climatic regions of the United States vary in humidity and dryness, coldness and heat, sunshine and cloudiness. These conditions limit the use of some materials in school construction in some geographical areas. Some areas demand sturdier and more costly materials.

7. Attractiveness

The conception of the application of paint which makes school plants attractive is often in error. Paint helps cover poorly selected materials and poor workmanship. Paint alone is not conducive to quality. The use of natural color in stone, wood, steel, iron, brick, and other materials can assist in creating a pleasing environment. A school plant must be attractive if it is a plant of quality. The factors of site, site development, and building location, the basic materials used in construction, and the equipment selected to be used in and on the plant must harmonize in order to make the plant "the pride of the community."

A checklist for determining quality in school plant planning and building

A CHECKLIST OF
(Cost range low on

ELEMENTS	1	2	3
1. Type of Architecture	Modern	Informal	Monumental
2. Height of Building	One Story	One Story With Basement	Two Stories
3. Kind of Construction	Frame	Masonry Walls, Wood and Joist Construction and Wood Finish	Masonry, Fire-Resistive Corridors, Ordinary Construction Otherwise
4. Floor Construction	Concrete Floating Slab on Ground (Tunnels Required for Heating Pipes With Central Heating Plant	Reinforced Concrete Over Crawl Space, Less Dampness, Pipes Accessible	Reinforced Concrete Over Basement, Suitable for Auxiliary Areas
5. Roof Construction, Room Areas	Wood Decking Over Wood Purlins, (Suitable Finish Without Additional Drop Ceiling)	Poured Gypsum on Acoustical Board Using Sub-Purlins Over Open Web Steel Joists, (Suitable Finish Without Drop Ceiling)	Composition Board Using Sub-Purlins Over Open Web Steel Joists, (Suitable Finish Without Additional Drop Ceiling)
6. Roof Construction Over Gym, Auditoriums, and Playgrounds	Wood Trusses and Purlins and Decking, (Timesaving, Neat Appearance)	Poured Gypsum Over Form Board on Sub-Purlins Over Open Web Long-Span Steel Joists	Composition Board Using Sub-Purlins Over Open Web Long-Span Steel Joists, (Ease of Construction), Similar to Insulrock Board, Tectum Materials
7. Roof Insulation (Increased Insulation Value Read Left to Right)	Bat Insulation Between Ceiling and Roof Deck in Lieu of Insulation on Roof Deck, (Moisture, Need Ventilation)	Rigid Board	Fibrous Glass
8. Roof Overhangs, (To Work in With Roof Design)	Wood	Wood and Cement Plaster Soffits	Poured Gypsum Over Asbestos Form Board
9. Roof Facias	Wood	Sheet Metal	Galvanized Metal Roof Decks, Needs Paint, Needs Periodic Painting
10. Exterior Walls (Excluding Metal Skin Wall Construction)	Wood	Concrete Block	Wood With Brick Veneer
11. Fixed Equipment	None	Recommend All Equipment Attached to Building	
12. Exterior Doors	Wood	Steel	Aluminum
13. Windows	Wood	Wood Ribbon Type With Glass Block Above	Steel
14. Entrances	Wood	Steel	Aluminum
15. Corridors	Single Loaded	Double Loaded	
16. Corridors Interior Wall Finish	Cement Block Can Be Painted	Wood	Brick With Plastic Coating
17. Corridor Wainscots	Wood	Brick, (Minimum Maintenance)	Cement, Enamel Sprayed On
18. Corridor Floor Coverings	Asphalt Tile	Vinyl Asbestos (Low Maintenance)	Linoleum
19. Interior Finishes	Wood Paint	Brick, Clear Plastic	Oak Finish
20. Window Stools	Wood	Metal	Quarry Tile
INTERIOR WALL TREATMENTS			
21. Room Interior Wall	Concrete Block	Wood, Stained or Painted Varnish Natural	Brick With Sealer G.M. 1001
22. Room Wainscots	None	Wood	Cement Enamel (Can Be Applied Over Concrete Block, Plaster, Etc.)
23. Gymnasium and All-Purpose Rooms	Concrete Block (Can Be Painted)	Brick (Will Clean Down, Requires No Painting) Sealer on Wainscot)	Plaster
24. Gymnasium and All-Purpose Wainscots	None	Wood	Brick 6 ft. High
25. Toilets Wall Finish	Cement Block Economical	Brick, G.M. 1001 Plastic Finish	Cement Plaster Painted
26. Toilets Wainscots	None	Brick, G.M. 1001 Plastic	Glazed Structural Tile
FLOOR COVERINGS			
27. Room Floor Coverings	Asphalt Tile	Vinyl Asbestos (Low Maintenance)	Linoleum
28. Gymnasium All-Purpose	Asphalt Tile	Vinyl Asbestos	Linoleum
29. Auditorium	Cement	Cement With Vinyl Tile	Asphalt Tile
30. Toilet Floor Coverings	Cement	Asphalt Tile	Quarry
CEILINGS			
31. Room Ceilings	None, Exposed Structural	Fibrous Glass Acoustical Tile	Fiber Acoustical Tile (Sound Absorbent)
32. Gymnasium All-Purpose	Exposed Roof Construction Wood or Gypsum	Tectum or Insulrock Deck	Acoustical Tile
33. Auditorium Ceilings	Exposed Roof Construction	Acoustical Tile	Plaster Designed for Acoustics
ELECTRICAL			
34. Classroom Lighting	Incandescent	Fluorescent Slow Start	Slimline
35. Corridor Lighting	Incandescent	Recessed Incandescent	Slimline
36. Gymnasium and All-Purpose	Incandescent Lamped With Pole	Incandescent Lamped From Floors	Recessed Incandescent
HEATING AND VENTILATION SYSTEMS			
37. Room Ventilation	Natural	Unit Ventilators	Central System Year Around
38. Heating System	Individual Furnaces	Warm Air	Hot Water
39. Heating and Ventilating Controls	Pneumatic	Electrical	Electronic

QUALITY LEVELS

left to high on right)

4	5	6	7
Gothic	Classical	Colonial	
Two Stories With Basement	Three Stories	Three Stories With Basement	
Fire — Resistive Walls, Floors, Stairways, Ceiling. Wood Floor Space. Wood Roof	Entirely or Fire-Resistive Materials		
Reinforced Concrete Over Open Web Steel Joists. (Flexible in Containing Pipes, Ducts, Etc., With Drop Ceiling)	Steel Decking Over Steel Girders. (Suitable for Finish Ceiling. Includes an Acceptable Ceiling Finish)	Reinforced Concrete Throughout (Fireproof Achieves Lowest Insurance Rates)	
Steel Girders Steel Purlins Precast Concrete or Gypsum Slabs. (Timesaving)	Laminated Wood Girders and Purlins With Wood Decking. (Pleasing Economical Design.)	Reinforced Concrete Over Long-Span Steel Joists. (Suitable for Job Requiring Drop Ceiling)	Steel Decking Over Long-Span Girders. (Suitable for Job Requiring Drop Ceiling.)
Two-Inch Foam Glass			
Steel Deck Over Steel Joists With Plaster Soffits and/or Aluminum	Reinforced Concrete		
Aluminum. No Upkeep. Excellent Appearance	Copper. Requires No Painting	Stainless Steel	
Face Brick With Concrete Block Back-Up	Face Brick With Brick Back-Up	Brick With Tile Back-Up for Plastering	
Aluminum Frame Major Portion Glass	All Glass Doors		
Steel Ribbon With Glass Blocks Above	Aluminum (Minimum Upkeep)	Aluminum Ribbon Type With Glass Blocks Above	
			Depends on Solution
Plaster	Glazed Tile		
Glazed Structural Tile (Minimum Maintenance)	Ceramic (Minimum Maintenance)		
Rubber Tile	Terrazzo	Ceramic	
Slate	Cast Stone	Synthetic Marble	Marble
Plaster Paint			
Structural Glazed Tile. Glazed Tile (Minimum Maintenance)	Ceramic Tile. (Minimum Maintenance)		
Glazed Structural Tile (Least Maintenance)			
Glazed Structural Tile	Ceramic Tile		
Ceramic			
Rubber Tile	Hardwood Floor Laid on Screeds		
Wood on Sleepers	Wood Block Set in Mortar	Wood on Sleepers on Cork Set in Mortar	Wood Set in Mortar on Cork Set in Mortar
Vinyl Asbestos	Linoleum	Rubber	
Terrazzo	Ceramic		
Mineral Acoustical Tile (Sound Absorbent)	Plaster. Acoustical Plaster		
Plaster			
Low Brightness	Fluorescent Rapid Start		
Recessed Troffers			
Fluorescent			Depends on Construction
Steam			

In planning your new high school, try—

A Departmental Approach

BERNARD BAGGS
Director, Music Education Department, Bergenfield, N. J., Schools

Planning the specialized facilities for a new high school building demands that each department set up organized procedures. A period of investigation must be devoted to planning the future programs and to the discovery of workable ideas for their implementation. This planning period can be more significant if the teachers and other persons to be affected are given an opportunity to participate in the decision making. "Here, co-operative activity is regarded as a means towards better decisions, growth of persons, and effectiveness of work."[1]

A Pace for Planning

In one school district in New Jersey, the department chairmen of a junior-senior high school were asked to be responsible for making recommendations for facilities of a senior high school planned to open in September, 1959. Within this schedule, the chairmen had almost a year to work out planning procedures within their departments before the first statement of educational specifications was presented to the state education department.

Varying circumstances often necessitate short-cut planning, particularly in those districts which do not have a high school organization in operation with traditions and experiences to guide the planners. In these times of complicated situations in high school building planning, it seems appropriate to pace the planning to include a re-examination of some of the thinking, research, and co-operative agreements of persons who have had the time to consider school building planning in depth.

[1]American Association of School Administrators, *Staff Relations in School Administration*, Thirty-Third Yearbook (Washington, D. C.: The Association, 1955), p. 13.

Let your department heads provide recommendations concerning the program, staff, and facilities required for their areas in your future high school

Purposes of Departmental Planning

The central purpose of the departmental planning should be to provide recommendations concerning the program, staff, and facilities required for their areas in the future high school. The basic viewpoint is always to organize the departmental program as an important division of the whole program of secondary education in that community.

Preliminary planning for a new high school building calls for a foreseeing of the future secondary education program in order to establish an educational foundation for the new school and a new administrative organization. During the period when the administrators are at work formulating these fundamentals, the departments should be meeting to determine long-range objectives for consideration in this over-all planning.

Probably the most valuable stage in this planning process is that preliminary stage from the time the superintendent delegates planning responsibilities until he formally presents the statement of educational needs to the board of education for their approval. Geared to this early stage in the planning process, the departments' recommendations should present the comprehensive view of their fields needed "before the architect begins."[2] This preliminary planning period can provide all members of the staff with unusual opportunities to exert educational leadership.

[2]E. W. Wiltse, "Before the Architect Begins," American School Board Journal, CXXX (Jan., 1953), 33.

Planning Activities

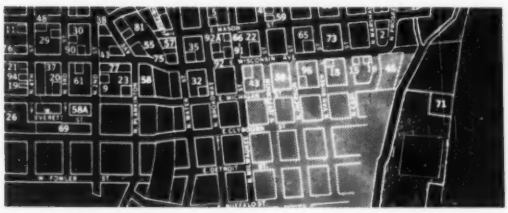
In the situation cited previously, many types of planning activities evolved in the year of departmental planning. The following chronological view is sampling, yet illustrative:

Month	*Typical action*
February	Department chairmen assigned planning responsibilities
March	New-building planning committee formed by principal
April	Chairmen investigated available literature
May	Some committees extended to include outside members
June	Summary meetings held to prepare for summer work
July	Special meeting held for summer staff members
August	Resource persons consulted and buildings visited
September	Principal accelerated planning by all departments
October	Board of education appointed building architect
November	Conference series with educational consultant started
December	First statements from departments presented to administration
January	Statement of educational needs presented to state department

This brief chart attempts only to reflect the climate in which departmental planning can operate in one situation. As in

(Concluded on page 53)

how schools can help



Urban Renewal

York, Pa., is wisely using new school construction to stop backward trends in older areas as a vital part of this forward-looking community's urban renewal program —

H. COLE WILLIAMS
Buchart Associates, Architects, York, Pa.

The school board of York, Pa., has operated for many years on the concept that the public school plant must be an integral part of community life. This unwritten policy has found expression in the use of classrooms for evening classes for adults, the utilization of auditoriums and gymnasiums for municipal concerts and community dramatic efforts, and the availability of school offices and facilities for meetings and campaigns of various community groups.

During the past three years, the community consciousness of York educators has found even more dramatic and concrete expression in the design and location of new school buildings.

The city of York is engaged in a continuing urban renewal effort, aimed at elimination of slum areas and revitalization of other areas which have been gradually falling into disrepair. Public housing has already replaced several of these undesirable sections of the city, but those areas which are only tending toward community blight have presented a special problem as they do in every sizable municipality. Deserted industrial locations, real estate neglected after a population shift toward the suburbs, and areas near active industry, near railroad yards and tracks and other producers of noise, smoke, and odors, are frequently centers of potential slums.

By co-ordinating their efforts with those of the city government, the York school board has eliminated at least three such areas from the city of York and has contributed immeasurably to the municipal efforts toward urban renewal.

A School on "Poorhouse Tract"

One of the city's first large steps toward the completion of a modern school plant was the Alexander D. Goode Elementary School, dedicated in November, 1955. The new school was constructed on a large deserted plot long known in York as the "Poorhouse Tract." Bounded by a railroad freight yard, warehouses, sprawling industrial buildings, the county prison, and numerous neglected residences, the tract had little to offer school planners.

Almost in the geographical center of this neighborhood was placed a million-dollar school building, including 24 classrooms, a kindergarten, administrative facilities, special classrooms for physically handicapped children, a cafeteria, and a gymnasium-auditorium specifically planned to serve both the needs of the school's pupils and the social and recreational needs of the surrounding community itself.

Since the neighborhood of the school is populated by low-income families of various races and national and religious backgrounds, the new school, providing new, unsegregated educational facilities

Serving low-income families in York's former "Poorhouse Tract," the Alexander G. Goode elementary school was built in co-ordination with the city's renewal efforts and was a main factor in uplifting the area.

4 Values in Urban Renewal School Building

- The school serves a dual role as social and recreational facilities for the surrounding area
- Long bus routes are eliminated
- A new community structure can contribute greatly to the eradication of an area potentially blighted
- The student, and parents, tend to take a more active part in the life of a school which is "right down the block where the brickyard used to be."

for all of the children of the immediate community, was instrumental in the relaxation of racial and religious tensions.

Appropriately, the new school was named for Rabbi Alexander D. Goode who, as one of the famed "Four Chaplains" of World War II who surrendered their life jackets to seamen on a sinking ship and died together, was a classic example of brotherhood at work. During his period as spiritual leader of York's Temple Beth Israel, Rabbi Goode played a vital role in efforts to end segregation and improve educational facilities.

All of these factors had an almost immediate effect on the community surrounding the new school. Local pride surged and real estate values in general ceased to decline. The intelligent placement of one major elementary school-recreation center was sufficient to halt the downward trend of one of York's problem areas.

An Abandoned Brickyard

The success of this venture encouraged future co-ordination of efforts by the city fathers and the school board. When the school directors began to consider the location of a new junior high school, their attention almost immediately focused on an abandoned brickyard. Unused commercially, the yard was blamed for the decline of the neighborhood around its perimeter. The school board's interest in the plot as a potential site for the new school gained the co-operation of municipal housing and redevelopment officials. The local redevelopment authority aided in clearing the site of antiquated structures and turned it over to the school board for development.

The new Hannah Penn junior high school, for which ground was broken in May, will house 1200 seventh, eighth, and ninth graders in 26 academic classrooms, plus specialized facilities for the study of science, industrial arts, homemaking, and similar subjects.

The plot itself, fully cleared of old buildings, consists of nearly 20 acres of land rectangular in shape. Ample space is included for the school facilities, parking areas, and large and adequate recreational and athletic areas. A small stream which bisected the lot was put to use in landscape planning. Its banks have been reshaped and covered with grass to add to the beauty of the school site.

An outstanding feature of the new school is its rounded auditorium with seating for 850 persons. Its modified stage "in the round" will permit standard auditorium use as well as an experimental area for student drama.

The beautification and practical use of a potentially blighted city area has again had its desired effect in revitalization of the surrounding community. Early evidence at the construction site indicates that the neighborhood will live up to the excellent example set by the school.

And an Amusement Park . . .

A third school building, the Arthur Ferguson elementary school, is being constructed on an abandoned amusement park area in still another section of the city. This building, which will be the first "classroom cluster" design in the geographical area, will house 870 elementary students. Its facilities include a kindergarten, special classrooms for the instruction of physically handicapped students, an all-purpose room which will serve as auditorium and cafeteria, and special medical examination rooms and administrative facilities. A total of 24 classrooms will be included, so located that students of various age groups are separated both at study and at play.

As a result of responsible planning and intelligent foresight on the part of school and city officials, the location of these three schools has been instrumental in halting backward trends in specific urban areas.

Factors for Site Selection

While a great many factors govern the selection of sites for new school buildings, there is concrete evidence in York that consideration of the added factor of urban renewal can produce excellent results. The location of a school building must, of course, take into account the population center of the area to be served, and the possible location of future residential and municipal housing development in the area, as well as such factors as potential industrial growth and the availability of land at a reasonable price. If, however, within the area prescribed by the other factors, there is a plot of land which contributes to neighboring blight, the values of its use should be considered.

The role of education in community life is never separate and distinct from other community functions. The education of a city's youth is an inherent and vital part of the city's future growth. Recognition of this basic fact — and application of the fact to the studies for new school locations — can result in links between a neighborhood and its school which literally pick up an entire neighborhood by its bootstraps and set it off in a direction of proud and continued community improvement. ■

Built on an abandoned brickyard, the Hannah Penn junior high school —

Selecting Lighting Fixtures

JACK BOUSE
Consulting Engineer
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In selecting your lighting fixture, be sure that it:

- ✔ Has a ballast which meets the proper ambient temperature standards.
- ✔ Provides for heat dissipation by use of vents, baffles, etc.
- ✔ Performs the required task.
- ✔ Is substantially constructed and finished for low maintenance.
- ✔ Manufactured by a reputable firm which will be able to replace and reproduce the product.
- ✔ Is priced within the budget framework of the school being built.

One facet of the mechanical problems encountered in today's trend to contemporary, low-silhouette, low-cost school buildings is that encountered with the selection of lighting fixtures. As the need for higher and higher levels of illumination meets "head on" the need for lower and lower ceilings, the basic selection of lighting fixtures assumes a greater prominence than ever before.

To affect low-ceiling classrooms, the fixtures must necessarily be mounted close to, or in contact with, the ceilings. This fact, associated with higher intensities, has generated a relatively new problem to lighting engineers in the form of heat and its resultant effect on the "working" parts of the fixture, namely the ballast, lamps, and in many cases, the actual finish of the fixture itself. Where the proposed ceiling for the classroom is cellulose or fibered acoustical tile of a combustible nature, this problem is not merely one of operating efficiency but actually a concern for the safety of the building and its occupants.

Selection Precautions

The heart of the problem lies, of course, in the ballast which as a transformer generates a great deal of heat. When this source of heat is enclosed tightly as in a lighting fixture of the fluorescent type, and is further cramped and crowded by the present tendency towards "wafer" or extremely thin lighting fixtures, certain precautions and stipulations must necessarily be included in the fixture selection.

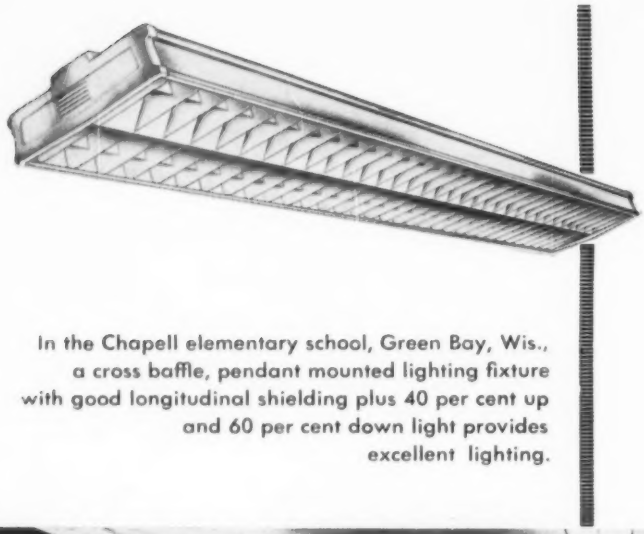
The factors which may be utilized by the engineer or architect in fixture selections may be generally itemized in the following categories:

1. Meeting Requirements

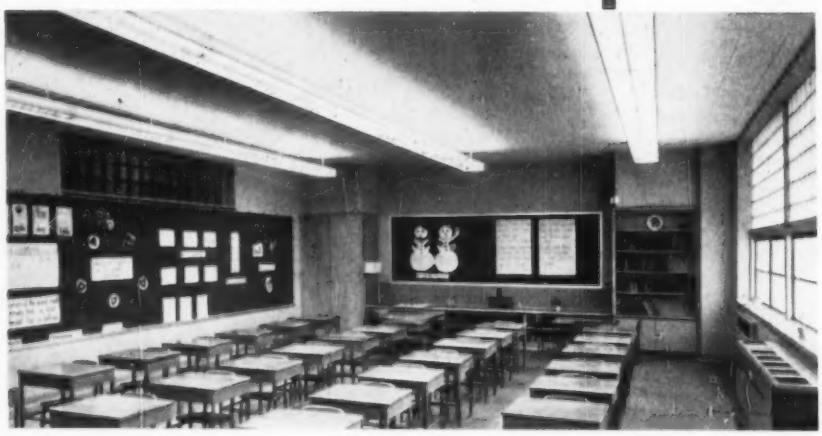
Each fixture specification should require that the ballast be constructed according to the requirements set forth

— Photos courtesy **Edwin F. Guth Co., St. Louis**

Goal of the Evanston, Ill., board in selecting lighting for its Washington elementary school. "It must be highly efficient shadow-free light, yet low in brightness for the pupils' greatest possible 'seeability' and eye comfort."



In the Chapell elementary school, Green Bay, Wis., a cross baffle, pendant mounted lighting fixture with good longitudinal shielding plus 40 per cent up and 60 per cent down light provides excellent lighting.



for approval by the Electrical Testing Laboratories, Inc., and the Certified Ballast Manufacturer's Association. This specification requires, in part, that the ballast be high power factor, and when in operation, must have not more than 90 degree centigrade ambient temperature around the ballast with a room temperature of 27 degrees centigrade. This requirement affects not only the ballast itself but also the manner in which the ballast is employed in the fixture by the fixture manufacturer.

2. Heat Dissipation

The fixture, if attached to the ceiling, must have some provision for heat dissipation, such as vents, heat baffles, or some spacing device which will allow the fixture body to be installed slightly below the ceiling itself.

3. Perform Required Task

The fixture must, of course, perform the task required. By the nature of the room and its proportions and the function or type of work to be performed in the space, a definite lighting arrangement is required. To effect this arrangement and place the light level at the intensity and locations required will usually dictate a certain type of fixture. In operation, the fixture must do the task assigned and yet keep within limits of surface brightness and minimize glare and undue reflection for the occupants. Most often this reduction of glare is accomplished with "egg crate" louvers or other devices which shield the bare lamp in each direction, or with some form of glass or plastic diffuser which spreads the light rays and thus reduces the direct glare. Specifications for fixtures should clearly state the type of shielding required, and in the case of louvers, should affix the degree of shielding in each direction.

4. Well Constructed

The fixture must be substantially constructed and finished. As in any product, fixtures must be selected for long life and low maintenance. As to construction, there are certain recognized metal gauge thicknesses which must be maintained to furnish rigidity and strength for the fixture dependent upon its dimensions and the service to which it will be placed. The methods of connecting parts, bracing, and support must be judged independently for each manufacturer's product.

The finish of the fixture is equally important in selection. Not only will a good finish reduce the amount of maintenance required over the years, but in many cases, the operation of the fixture requires parts of the fixture to reflect light to effect proper distribution. As these parts fade, peel or otherwise degenerate, they defeat the program in both instances. The finish of the fixture should include a basic coating or means of holding the paint and protecting the metal and the final finish should be firmly baked on (in the case of paints) or should be of high quality, high reflectance aluminum.

5. A Reputable Manufacturer

It is highly desirable that the fixtures selected be those manufactured by a reputable firm engaged in the business. As in any line of merchandise, one must be assured that the manufacturer will stand firmly behind the product in the event of difficulties; that replacement items will be available at a future date; that matching fixtures will be available for future replacement or addition.

To qualify in this field, a manufacturer should have his own product and research engineering department to perform research for improvement and to develop better installation procedures and application for his fixtures. Beyond this, the manufacturer should be recognized in the industry, be of sound financial status and should, in general, be an asset to the industry.

6. Favorably Priced

In the final analysis, the cost of the fixture must be in line with the economic status of the building or within the budget established for new building construction. It should be recognized that there are on the market fixtures in various cost ranges which will fulfill the stipulations set forth. Some of these far exceed the minimums and are generally more expensive; some barely reach the minimums and in general do not cost as much.

In summary, the selection of fixtures for any school facility must sooner or later measure up to the categories outlined. If these items are properly accounted for in the final selection of fixtures, the building will profit with a good system of illumination of low maintenance and long life. If the factors are not considered or are bypassed in favor of lower initial price, the building will eventually pay the price in loss of efficiency, high maintenance, and early replacement. It should be borne in mind that with lighting fixtures — as with many other school equipment and supplies — the lowest cost fixture is not necessarily the "cheapest" in the long run. ■

A clear analysis of an increasingly important area of modern school design—

Acoustics in School Planning

The auditorium ceiling of the new high school in an eastern community was covered with 6700 square feet of *acoustical* tile. The comment of one member of the audience attending a concert by a nationally known orchestra shortly after the school opened was: "It seemed like I was sitting in a felt pocket."

A new grammar school in a growing suburb is the pride and joy of the residents. It embodies the most modern principles of architecture and pedagogy. The help in the cafeteria kitchen are very unhappy. The racket created by a hundred small shrill voices is driving them to distraction and they are threatening to quit. The ceiling is covered with *acoustical* plaster, but it was not properly applied.

A recently constructed junior high school has an auditorium that everyone agrees has excellent acoustics. The practice rooms in the music suite are used only for storage because sound is transmitted freely through ventilating louvers in the doors.

The foregoing actual cases are examples of acoustical faults which might have been nipped in the bud. Thousands of dollars worth of remedial measures would have been saved had an acoustical engineer been consulted in the early planning stages. Unfortunately, this was not done. Too often the importance of the acoustical engineer is realized only after trouble is obvious.

The field of acoustics is highly specialized and a thorough study is not generally included in the architect's training. He is, therefore, inclined to rely on his somewhat limited knowledge and the advice and counsel of the suppliers of acoustical materials. Not many representatives of these companies have had the broad training in acoustics to enable them to take on the many problems which can and do arise.

If the resulting structure is found to have acoustical faults, such as those enumerated above, someone may then think of calling in an independent acoustical engineer. This places him in an awkward position because, for some reason, everyone expects him to pull a simple remedy out of his hat. In some few cases he can do just this, and then he is considered a miracle worker. In many others he can only use measures that are partially effective, and in still others he is completely blocked — the only solution being to tear down and build up again which, of course, no one wants.

Good acoustics is something which is best built into a structure, not applied afterward. The earlier the acoustical engineer is consulted in planning a project, the easier it will be for everyone concerned and the more satisfactory will be the results.

Some Acoustical Fundamentals

There are several widespread misconceptions concerning acoustics. Among these is the idea that because a product is labeled *acoustical* or *noise reducing* it will solve all problems, and that the more such material is applied the better the acoustics of a room will be. Before proceeding any further with the function of the acoustical engineer, it would be well to point out here a few facts and fundamental principles in the science of sound that have architectural significance, and which may not be well understood.

Certain materials in the form of tiles, plasters, fibrous sprays and blankets are known as "acoustical." They are effective absorbers of sound, *but are not efficient in preventing the passage of sound to other spaces.* For instance,

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- *What is the role of acoustics in modern school planning?*
- *What are the major areas in which the acoustical engineer can contribute to the well-planned school?*
- *What are the fundamental principles in the science of sound that have significance to the school planner?*

a basement equipment room can be made less noisy by installing a ceiling of one of these materials, but it will not help much in preventing the noises from passing through the floor to the upstairs areas. They can be likened to a piece of Kleenex which will blot up water but will also allow it to pass through.

The control of reverberation is one of the more important aspects of acoustical design in architecture. Reverberation is the gradual decay of sound that takes place within a room due to absorption during multiple reflections from walls, floor, and ceiling. It is the factor which determines whether a space is acoustically "live" or "dead," and is proportional directly to the volume of the room and inversely to the amount of absorption within its boundaries. Too much reverberation confuses speech; too little detracts from music and, in general, reduces the total sound intensity. The optimum reverberation time for a given room depends on its proposed use.

The efficiency of acoustical absorbing materials varies greatly with the frequency or pitch of the sound. Most commercially available materials such as tiles, blankets and acoustical plasters are not efficient in absorbing low tones. A typical perforated tile, for instance, will absorb 96 per cent of the sound striking it if the sound is two octaves above middle C on the piano. At one octave above middle C the absorption is 83 per cent; at middle C the absorption is down to 26 per cent; and for an octave below middle C, the absorption is only 6 per cent. In a room treated with this material alone reverberation of high pitched sounds is easily controlled. Other measures must be taken, however, to absorb the low tones or a "boominess" will be noted.

In a large room, reflections from walls and ceiling are beneficial in reinforcing direct sounds reaching a distant point provided:

1. They do not arrive too late, creating a definite echo. This condition is reached when the difference between the reflected path and the direct path is greater than 65 feet.

2. There are no focussing effects, creating "hot spots" and dead areas. This is determined by the shapes of walls and ceiling. The phenomena of "whispering galleries" are entirely due to such focussing.

Sound waves are carried through the air, and through the building structure. In regard to the first point, many laymen fail to realize that sound will travel *against* the flow of air almost as well as in the same direction. Therefore, if precautions are not taken, a ventilating system can form a series of speaking tubes between rooms, regardless of the direction of air flow. Second, vibrating machinery can set up a disturbance in rooms some distance away by virtue of structure-borne sound.

Sound passes through small cracks and openings with great facility. Ventilating louvers as well as doors and windows which do not seal tightly against their stops are great offenders here.

The ease with which sound is transmitted through a solid wall or partition is dependent on the type of construction used. Walls affording a high degree of isolation must be specially designed for a school.

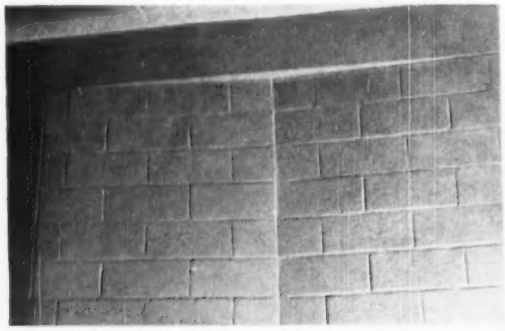
Function of Acoustical Engineers

If one thinks of the acoustical engineer at all in school design, it is likely to be in connection with the auditorium. As may be judged from the foregoing discussion, this is only one of the areas in which he can be of assistance to the architect and school board. However, in view of his extreme importance here, the auditorium is probably a good place with which to begin in describing what the acoustical engineer does.

In planning the auditorium he will determine with the architect the shape of walls and ceiling so that reflections will reinforce the sound at the rear, and be dispersed evenly throughout the area without causing disturbing echoes. Surfaces will be checked for good diffusion and elimination of focusing. He will set an optimum value for the reverberation time based on the volume of the room. From this he will calculate the number of absorption units required to achieve this optimum value. Next, the acoustical engineer will make recommendations to the architect on the selection of wall, ceiling, and floor finishes, seating and draperies on the basis of their acoustical properties in order to provide the required amount of absorption.

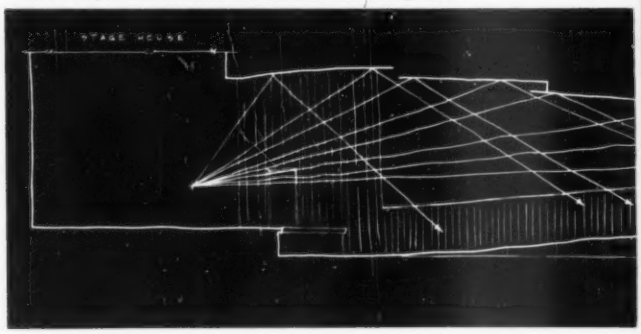
The ideal is to provide an auditorium which will have approximately the same reverberation characteristics regardless of the size of the audience. The old saw about hearing a pin drop on the stage is no valid test of the acoustics of an auditorium. This can be done in a space whose reverberation time is so long that speech will become confused and unintelligible. On the other hand, the pin might be clearly heard when the room is empty, but not when a full audience is present. Indeed, the

acoustics in school design—



Irregular classroom walls aid diffusion and blending of sounds. The cinder blocks aid absorption.

—Photos from **Acoustics for the Architect**, Burris-Meyer and Goodfriend, Reinhold Publishing Co.



into a structure, not applied afterward. . . ."

people could add so much absorption that a normal speaker could not be heard beyond the fifth row of seats.

The acoustical engineer will check the heating and ventilating plans and, if necessary, make recommendations to insure noise-free and vibrationless operation. He will also check for room-to-room transmission along the duct work and piping.

If a sound system is specified, and this is often done by the electrical engineering consultant, the acoustical engineer can check to see if it is adequate. He can also check to see that it is not unnecessarily overadequate. In an auditorium that is well designed acoustically, it is certainly not good economy to install a complex, expensive sound system that is not needed or used. Unfortunately, there are many individuals today who seem to believe that the only way voices can be heard in a large room is by means of loud-speakers. It is the writer's opinion that schools should cultivate the vanishing art of voice projection, and as far as possible eliminate the enfeebling crutch of electronic amplification.

Proceeding to the music suite, the acoustical engineer will prescribe the amount, type, and placement of absorptive material in order to provide optimum conditions of reverberation and blending of sounds. Wall construction will be examined to ensure adequate isolation from adjoining rooms. Door closures and the ventilating system will be examined for the same purpose. Small practice rooms will be absorbently treated and isolated from each other and adjoining areas.

Acoustical treatment of classrooms may or may not be necessary, depending on their size. In any event, it is well to have the treatment specified by an expert. There have been many classrooms so overtreated that the teacher could not be heard readily at the rear of the room. And, conversely, she could not hear the small disturbances *created* at the rear of the room when her back was turned.

The offices and nurse's quarters should be well isolated, acoustically, from adjoining areas. The acoustical engineer may find it necessary to provide for special wall constructions here. If a program of audiometric testing is carried on, it may be necessary to provide a special room for this purpose. It should be so well isolated that the background or ambient noise level is within specified limits or the test results will be faulty.

If there are separate audio-visual rooms or remedial speech training rooms, they should be given particular acoustical consideration. The acoustical engineer's experience in the field of broadcasting and recording studios, theater, and motion picture work will be valuable in these areas.

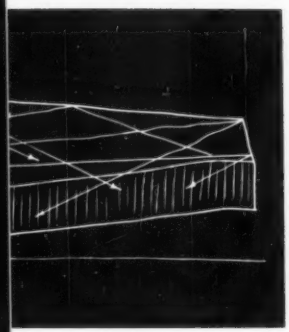
Shops and boiler rooms need isolation treatment, particularly if there are classrooms overhead. A special hung-ceiling construction is often indicated in these areas. Vibration mounts for machinery may also be called for. In many cases, severe problems of noise isolation are most simply solved by relocating the questionable area. The acoustical engineer can advise the architect on the relative economic advantages of relocation versus treatment.

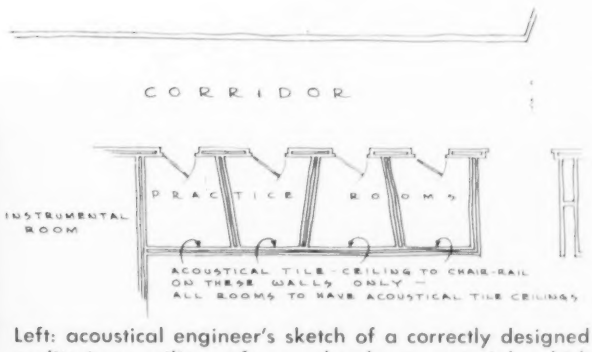
The cafeteria, of course, needs acoustical treatment to keep noise levels down. However, in recent years more and more use has been made of multi-purpose rooms, for reasons of economy. We have the cafeteria-gymnasium combination, the auditorium-gymnasium combination, the cafeteria-auditorium and, on some occasions, the triple-functioned cafeteria-auditorium-gymnasium. These represent some of the knottiest problems a board of education can throw at the acoustical engineer. If these activities were conducted in separate rooms, different acoustical treatment would be required for each to achieve the best conditions. When a single room serves several purposes, the best an acoustical engineer can do is to effect a compromise which will give a modicum of satisfaction in each direction. When used as an auditorium, however, the room will generally have many shortcomings.

One final word which, perhaps, should have come first: It is sometimes wise to consult the acoustical engineer in the matter of site location. If a school is to be built adjacent to a noisy trucking route, railroad, or other noise source, it may mean extra expenditures for special exterior wall, roof, and window construction in order to keep interior noise at a reasonable level. Although land contours can sometimes afford adequate isolation, it is not well to rely on trees, shrubbery, or other planting for this purpose. The amount of acoustical shielding they provide has been vastly overrated.

The foregoing discussion has indicated the major areas in which the acoustical engineer can contribute to the well-planned school. It should be evident that in this planning, acoustics should not be dismissed lightly. There are many pitfalls for the layman and the employment of a qualified expert in the field, either by the architect or by the school board directly, represents a long forward step in ensuring optimum conditions in the finished structure. Compared to other costs involved in the project, the acoustical engineer's fee is relatively small. In the long run, he may save the cost of his services many times over in eliminating excessively costly construction or expensive remedial measures which must be taken at a later date.

His design and calculations are worked out from plans and sketches submitted by the architect. Specific details can be taken up by telephone and written communication. It is not necessary, therefore, that he must be in the immediate vicinity. He will co-operate with the architect and should be kept advised of any major changes made as the plans progress. The earlier he is brought into the planning stages of a new project, the more helpful he is. ■





Left: acoustical engineer's sketch of a correctly designed auditorium ceiling of non-absorbent material which reinforces sound from stage without producing echoes. Above: a recommendation of music practice rooms with non-parallel walls.

Controversies Cloud Administration of Defense Education Law

ELAINE EXTON

Only time will tell whether, as the programs authorized in the new National Defense Education Act get rolling, accomplishments will dispel dissatisfaction or mounting criticisms will touch off scandal that will set education progress back.

How effectively the U. S. Office of Education administers Public Law 85–864 will not only influence its successful implementation but will have a profound effect on how the Congress will decide to deal with future aid-to-education legislation.

The administrative pattern adopted by the U. S. Office of Education assigns the new programs authorized by the Act to four of the existing Divisions of the Office. Responsibility for the ten titles of the law has been parceled out to eight new sections and four new branches set up in these divisions as follows:

Title 3 (strengthening science, mathematics, and language instruction) and Title 5A (testing and counseling) are being administered by *a new Aid to State and Local School Systems Branch* in the Division of State and Local School Systems. Responsibility for Title 10 — Section 1009 (improving statistical services) has been put under a new section in this Division's School Administration Branch. The Assistant Commissioner for Vocational Education is now giving personal attention to carrying out the functions of Title 8 which later will be lodged in *a new Area Vocational Education Branch* to be established by the Division of Vocational Education.

Title 7 (utilization of radio, TV, motion pictures) is being administered under *a new Educational Media Branch* in the Division of Statistics and Research Services. Titles 2 (loans to students), 4 (fellowships), 5B (institutes to train councilors), and 6 (foreign language centers and institutes) are the responsibility of *a new Financial Aids Branch* in the Division of Higher Education. (Further details about the administrative structure for the new Act and the personnel in charge of it are furnished at the conclusion of this article.)

Pros and Cons

Under this plan there is no over-all coordinator to head up the administration of the Act unless the Commissioner of Education or the Deputy Commissioner who has other demanding duties can be considered as filling this role.

Office of Education spokesmen call this fragmented pattern "logical." They explain that incorporating the various titles of the Act within the existing units of the Office whenever possible has the double advantage of (1) placing the activities in the sections which have competency in the fields concerned and (2) enabling educators in the states to continue to contact the persons with whom they are accustomed to deal.

Acknowledging that a new Division could have been created to administer the Act they declare this would have tended to duplicate other activities already going on in the Office.

In a recent statement U. S. Commissioner of Education Lawrence G. Derthick commented: "We will do the Act justice only if we see it as a mighty complex, in which each part re-enforces the other, and all parts join to strengthen education across the board."

Some people present a similar argument to justify centralizing the administration of the Act in one Division. Questioning how the administration of fragmented parts can accomplish the whole spectrum of objectives of the National Defense Education legislation, Howard A. Meyerhoff, the Executive Director of the Scientific Manpower Commission, for example, states: "The purpose of the bill in my judgment is a unified purpose in which the integration of parts is rather important — no one of which can be carried on separately and successfully to get the full result envisioned by the Act."

Other critics suggest that the present administrative arrangement may convert the program to a "general aid" measure rather than making it a direct, sharply focused effort to strengthen science, mathematics, and foreign language instruction as many of the Act's provisions specify.

One also hears that the administrative machinery in use makes empire building easier for a powerful "old guard" clique.

Status of State Plans

Policies and procedures governing the preparation of state plans for area vocational schools (Title 8) and for the improvement of statistical services (Title 10) were mailed to the Chief State School Officers in late October.

Developments have followed at such a fast pace that James H. Pearson, the Assistant Commissioner for Vocational Education, predicted a majority of the states will have obtained approval of state plans and will have, or be in a position to have, courses for the training of highly skilled technicians in operation during the first quarter of the new year. Fred Beach, the Director of the School Administration Branch, reported the Office of Education could begin making grants for statistical services in December, 1958.

Last to get off the ground of the four provisions of the Act requiring the submission of state plans were the two titles — 3 and 5A — placed under the Aid to State and Local School Systems Branch. While the newness of these activities was a retarding factor, the delays were partly due to problems of staffing. Since the lion's share of the school aid funds will be channeled through this new Branch, it is legitimate to look at some of the behind-the-scenes controversies that are already impairing its effectiveness.

Of the $40 million Congress appropriated

to initiate the activities of the National Defense Education Act, $25,750,000 have been allocated to grants programs the aid to State and Local Schools Branch will administer: For *Science, Math, and Modern Foreign Language Instruction* (Title 3)—*Equipment Purchase* $19 million (matching required), *State Administration* $1,350,000 (matching required after first year); *Guidance, Counseling and Testing* (Title 5A) $5,400,000 (matching required after first year). Area Vocational Education (Title 8) is assigned $3,750,000 (matching by state and/or local funds required) and Statistical Services (Title 10) $400,000 (matching required.)

If Congress actually appropriates the full $887 million authorized for expenditure in the next four years by this new federal-aid-to-education measure, as much as 360 million dollars could be spent by the Aid to State and Local School Systems Branch as follows: Title III *Equipment* $280 million. *State Administration* $20 million and Title V $60 million.

Problems of Staffing

A center of contention has been the appointment of officials to fill certain key positions in administering the Act. Critics have contended that long before the ink was dry on the signature of President Eisenhower that made the National Defense Education Act a law, office politics had decided who would be appointed to what positions. No outsider, they claim, ever had a chance to compete for the top appointments.

The leading organizations in the three fields repeatedly stressed in the Act — science, math, and modern foreign languages — have stated that they were not consulted about suitable candidates for the important posts which would have so much influence in setting the climate of operation and policy interpretations. When the Office of Education did invite their representatives to a meeting in mid-October, they charge, they were presented with a *fiat accompli* and were able to suggest qualified personnel for some lesser positions only.

In a recent letter to Secretary of Health, Education, and Welfare Arthur S. Flemming, Herbert A. Smith, as President of the National Science Teachers Association, wrote: "We, in NSTA, are convinced that local, state, and federal supervisors should be mature, competent, and thoroughly qualified individuals both professionally and academically in the fields in which they work. Only in this way will they be respected by classroom teachers, administrators, and scientists, and at the same time, insure the maximum educational return for the investment of the public tax money."

The Issue of Specialists

A difficult area is the determination of how specialists should be used most effectively — whether someone with stature in the academic disciplines should be named to the head or to advise the head of the Aid to State and Local School Systems Branch, the branch responsible for the Act's title which seeks the development of science, math, and modern foreign language instruction. As the structure now stands, the subject field specialists occupy a section three "layers" down from the head.

Whether any subject-matter specialists should be attached to the Aid to State and Local School Systems Branch remains an unresolved issue. One school of thought contends that the specialists should be placed outside the Branch responsible for approving the state plans and money grants in order to lessen any opportunity for criticism of federal control.

Some people question whether it is either good administrative practice or an efficient way of spending government money to set up a second group of specialists within the Office of Education and thereby duplicate the professional personnel already employed in the Office of Education's normal program channel, namely, the Instruction, Organization, and Services Branch (J. Dan Hull, Dir.) with its long-established working relations with the states.

In support of this point of view the professional staff of the Instruction, Organization, and Services Branch sent a request to the Commissioner of Education in October in the form of a memorandum asking that the specialists be retained in this older unit and their numbers expanded to provide whatever additional consultative services the Office of Education might require for the administration of the National Defense Education Act. They pointed out that the setup in the Instruction, Organization, and Services Branch parallels the organization pattern followed in many of the states and makes possible a unified and balanced program.

Changing Character of O.E.

Actually some of this dissension does not originate with the administrative problems posed by the passage of the National Defense Education Act alone but traces back to deep concern about the direction which the U. S. Office of Education will take in the future.

The Act of 1867 creating a federal agency for education defined its functions chiefly in terms of fact-finding and providing professional leadership. In the language of its original charter the Office of Education was established "for the purpose of collecting such statistics and facts as shall show the condition and progress of education in the several States and Territories, and of diffusing such information respecting the organization and management of schools and school systems and methods of teaching, as shall aid the people of the United States in the establishment and maintenance of efficient school systems, and otherwise promote the cause of education throughout the country."

In the past the U. S. Office of Education has been primarily *a research and service agency* furnishing factual information and technical and professional leadership as stipulated in its charter. During the last eight years Congress has enacted legislation giving it responsibility for *four new "operating" programs* of a temporary and specialized character which call for the disbursement of federal money to activities outside the Office of Education.

The sums appropriated for grants and payments to the states for carrying out these "operating" programs far exceed the amounts that Congress is making available for the traditional basic functions of the Office of Education.

The $229,500,000 already appropriated for grants for these four new programs in the current fiscal year (1959) is more than 30 times as large as the $6,086,500 provided to the U. S. Office of Education for Salaries and Expenses. Besides the money for the research and consultative services the Office of Education normally carries on, the $6,086,500 figure encompasses the funds for administering all the grants programs of the Office, including $1,079,071 for School Assistance in Federally-Affected Areas and $750,000 to run the new Defense Education Program.

The $229,500,000 appropriated for grants-in-aid to be distributed under these four new "operating" programs in fiscal 1959 breaks down as follows: $180,800,000 for School Assistance for Federally-Affected Areas; $6 million for Rural Library Services; $2,700,000 to support Co-operative Research in state departments of education and institutions of higher learning; an initial $40 million to start the activities of the National Defense Education Act which may be augmented by an even larger supplemental appropriation before the end of this fiscal year.

The total federal aid made available for these new operating programs is more than 4 times as much as the Office of Education's two oldest grants-in-aid programs will get: The land-grant college program will receive $5,052,000 (which includes a $2,550,000 permanent appropriation) and vocational education will obtain $40,888,000 (which includes a $7,138,000 permanent appropriation).

What effect the addition of operational responsibilities of such magnitude will have on the administrative structure and staffing of the Office of Education is raising some fundamental questions. Will it bring about a permanent shift in emphasis away from the traditional fact-gathering and leadership functions of the Office of Education to that of direct program operation and distribution of federal funds? Can a balance be struck between these two types of functions? Are both equally important to the development of education in the long run?

How will a trend toward expanding operating programs affect the structural organization of the Office of Education and the type of personnel who will be needed in key positions? Will it result in a corresponding shift away from the type of research and service persons trained in the various academic disciplines and educational service areas who now largely compose the Office of Education's professional staff to "career" administrators and persons primarily trained in fiscal management? Will pressures stemming from new developments in the operating programs require a disproportionate amount of the Commissioner of Education's time?

Should both research and operating responsibilities continue to be combined within the Office of Education or should a separate agency be established to administer the operating programs?

What kind of an Office of Education at the federal level would best meet the needs of our times? This would be a timely topic for discussion at school board meetings — both state and local. The consensus of opinion and individual comments could then be forwarded to the Commissioner of Education and friends in Congress. As always when there are basic issues of public policy affecting education at stake the American people should have an opportunity to participate in determining these policies. ■

the
AMERICAN
SCHOOL
BOARD
JOURNAL

An Independent Periodical of School Administration
William C. Bruce, Editor

FIRE DANGERS IN SCHOOLS

THE absolute and continuous necessity of keeping school buildings safe against fire and panic has been brought home sharply to school boards by the fire in a Chicago parochial school, where 90 children and three teachers lost their lives. Whatever the original cause of the fire, the evidence thus far shows that, in the school where the fire occurred, the simple use of noncombustible construction of the stair wells, the provision of fire doors cutting off the corridors, and a fire alarm would have prevented most, if not all, loss of life.

Following the Collinwood, Ohio, and Camden, S. C., fires, and the New London, Tex., explosion there were panicky reactions among fire department officials and school boards, and demands for extreme changes in construction and multiplication of stairs and exits. In the decades that followed, the state and local safety codes were upgraded and in some instances extremely rigorous requirements were set up. As time passed, the administration of the codes, except as applied to new construction, was not so sharp, and the economic inability of school boards to bring all old structures up to the new standards in many instances led to an inexcusable laxness. It is certain that this latest disaster in Chicago will again lead to extremes, unless there is a common-sense approach to the safeguarding of each building. In most communities completely satisfactory results can be arrived at by (*a*) the use of a sound survey conducted by fire engineers rather than insurance men; (*b*) the development of a program which will at once eliminate all serious hazards as recognized by state codes and the less probable dangers within a year, (*c*) the enforcement of strict rules for safe housekeeping, (*d*) the intelligent use of fire drills modified from month to month to anticipate possible different dangers; (*e*) the acceptance of the fact that safety from fire and other dangers is a constant problem of the supervision of schools by the central staff and the principals; (*f*) emphasis on fire safety in the elementary and secondary curriculum; (*g*) cooperation in safety efforts with municipal authorities and organizations of citizens.

School safety conditions the country over are measurably better than they ever were in the past. There is no reason why complete safety cannot be achieved in every community.

NEW YORK CITY BUILDING COSTS

THE heated controversy between City Comptroller Lawrence E. Gerosa and the New York City board of education on waste in school building construction has revealed the questionable validity of most of the criticisms leveled against the board. It is true that the cost of new buildings might have been pared down by eliminating all elements of beauty from the architectural design and materials and by cutting down on educational services provided by ample lobbies and other features. We think, however, that the board has an effective answer to the Comptroller's criticisms in the statement that it has worked effectively to "provide functional schools which are aesthetically pleasing, economically maintained, and accurately constructed at low cost. Economics cannot be effected by the reduction of essential educational facilities and services, or by the use of inferior construction methods and materials." The charge that the board could have reused plans more frequently and could have obtained architectural services at 4 per cent as against 5 and even 6 per cent does not hold water. Variations in site sizes and adjoining street conditions make changes in plans necessary and more than justify the payment of a fee to the architect. Schools are not simple buildings like warehouses, and especially junior and senior high schools require special plans for such areas as laboratories, domestic science rooms, lecture rooms, etc. All of this planning cannot be compensated by a 4 per cent architect's fee.

Since the prewar years, the New York board has carried on a carefully balanced program of planning schools to fit the classrooms and other instructional areas to the newer conditions and needs. Exterior designs and interior details in all instructional, communication, and service areas have been simplified and functionalized. The cost of so-called embellishments by the use of glazed brick, architectural mosaics, and cut stone has been an infinitesimal part of the whole cost of the buildings. It has more than justified itself by the respect which these aesthetic elements create in the citizens, especially in the drab and poverty-stricken neighborhoods.

The whole problem of economy in schoolhouse planning and construction deserves the careful study of expert personnel employed by state education departments and local boards of education. The recently released research study of "Potential Economies in School Building Construction," completed by Rensselaer Polytechnic Institute for the New York State Education Department offers many suggestions for genuinely effective long-range savings. The study takes cognizance of the primary importance of educational service as the reason for all schoolhouses. Cheapness is not to be confused, says the report, with true economy which may be considered as synonymous with maximum value over the long term. This means that the over-all picture of school costs — fixed charges, capital outlay, operational costs, debt service, and maintenance — must be judged in relation to the useful space distribution insured by each plan. When any of these factors is overlooked there is waste.

OPPORTUNITY KNOCKS

IN THE house organ of the San Diego County, California, school system, Supt. C. D. Hardesty recalls to the teachers the opportunity which the new National Defense Education Act presents for distinctly improving the service of the schools. He calls for the use of the additional funds which will be available for science, mathematics, foreign language, guidance, and audio-visual aids for definitely improving the quality of the present instruction and the extension and strengthening of the existing program. He asks for a study of the existing plans on the basis of projects which will fully achieve the purposes of the Defense Education Act.

It is to be feared that many school systems will accept the federal aid in a casual manner and will continue to teach the subjects in the federal program in their former conventional manner. If this happens in many communities, the purposes of the Act will be defeated and valid reasons will be found for federal interference in local school affairs.

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N.S.B.A. REPORT

W. A. SHANNON Executive Director N.S.B.A.

Twelve Months of Great Progress

As school board members and association leaders from all parts of the nation prepare to gather this month in the city of San Francisco for the 1959 Annual Convention of the National School Boards Association, they can look back upon 1958 as 12 months of great progress in the program of the national association. Space limitations do not permit a detailed account of this progress, but here are some of the major high lights:

● The District of Columbia joined the NSBA on a full-goal basis, bringing to 51 the number of basic association memberships in the national organization. The NSBA Delegate Assembly thus grew to 102 members, representing every section of the continental United States as well as Alaska and Hawaii.

● NSBA headquarters were moved from Chicago to Evanston, Ill., to provide space for needed expansion, to reduce staff commuting time and thus increase the effective working day, and to permit easier access to the resources of a major library.

● The executive staff was augmented by the appointment of Dr. Harold V. Webb, former executive secretary of the Wyoming School Trustees Association, as associate executive director with special responsibilities for field services and convention exhibits.

● The NSBA publications program underwent significant expansion and development. Among the published materials issued during 1958 were (1) *Seven Studies*, the reports of seven outstanding consultants to the NSBA's "Organization and Action Project" on "islands of experimentation" being carried on in districts around the nation for educational improvement; (2) *Paths of Action*, a 42-page final report and analysis of the findings of the "Research and Development Project" on the improvement of the lay leadership of American public education; (3) *School Boards Plan for Disaster Problems*, a pamphlet prepared and published with the co-operation of the Federal Civil Defense Administration; (4) *You and the NSBA*, a new 12-page brochure explaining the purposes, structure, plans, services, and other elements of the national association's program and organization; (5) *New Approaches*, a reprinting of a 1955 NSBA publication which grew out of the "Kansas City Symposium of the National School Boards Association on the Problems of Public Education"; (6) the *1958 Yearbook*, and before the year was out the *1959 Yearbook*, both with vastly improved content and format; and (7) *This We Believe*, a publication issued jointly with the American Association of School Administrators, and which constituted a reaffirmation by the NSBA and the AASA of faith in the public schools.

● *This We Believe* was the result of one of many co-operative arrangements entered into or continued by the NSBA during 1958 with other organizations and agencies interested in public education. Having issued their joint basic statement, the AASA and the NSBA are continuing with planning the development of criteria and instruments for the evaluation of school systems. Another event in this area of great importance was the beginning during 1958 of official representation by the NSBA on the Advisory Committee of National Organizations to the U. S. Office of Education. During 1958, the NSBA also continued as a member of the study group known as "Six National Organizations," in the planning and scheduling of important workshops on major public school problems. Representation by the NSBA at important national conventions increased during 1958, as did the organization's representation at important educational conferences and meetings.

● Increased attention to planning characterized NSBA efforts in 1958, particularly in the development of new, needed projects. Probably the most important of these is the National Center for School Board Studies, which has been envisioned as a primary source of reliable information about school board operation, function, and membership. The National Center has now been organized with a functioning governing board; and two major research fund proposals have been designed and presented for consideration. Another proposed project developed during 1958 is the NSBA Fellowship Program, through which outstanding, competitively selected graduate students would work with the National Center and the NSBA while pursuing advanced level studies. A third project with a high potential of service to the NSBA's major purposes and objectives is the Six Films Project. Detailed plans were worked out for a series of half-hour films designed to increase public and school board understanding of the extreme importance of the school board system and school board service to the future of the nation and the preservation of its democratic system.

● The NSBA Delegate Assembly, at the time of the 1958 Annual Convention in Miami Beach, Florida, took one of the most important steps in the NSBA's history when it approved changes in the organization's Constitution and By-Laws which made possible the broadening of the base of membership participation and support. This action permitted membership in appropriate classifications under prescribed circumstances of individual school boards, state boards of education, individual school board members, past school board members, individual professional educational personnel, and commercial or professional service organization personnel interested in the welfare of the public schools.

● One of the great high lights of 1958 was the National Convention in April in Miami Beach, devoted to the theme of "School Boards and the Curriculum." Although this was the first "independent" convention in the NSBA's history, the meeting attracted just a few less than 3000 registrants for what has since been described as one of the most important educational gatherings held in the nation in 1958. The convention event which probably evoked the greatest interest on the part of the participants was Dr. James B. Conant's preliminary report of his two-year study of the American high school.

The year of 1959 is expected to eclipse 1958 in accomplishments. Many of the efforts made in 1958 in planning for the future are expected to come to fruition in 1959. The new year starts off with an event of great importance, when the 1959 Convention in San Francisco is called to order on January 25 by President Munck. The theme of the convention, "Improving Education — A Free People's Responsibility," is a subject of crucial importance, particularly in view of the increasing incidence of ill-considered statements about the need for centralization of public education or the need for a national curriculum design. Present to assist board members in their consideration of this subject will be such men as Adlai Stevenson, Charles B. Shuman, William G. Carr, James B. Carey, Lawrence Derthick, Byron S. Hollinshead,

(Concluded on page 47)

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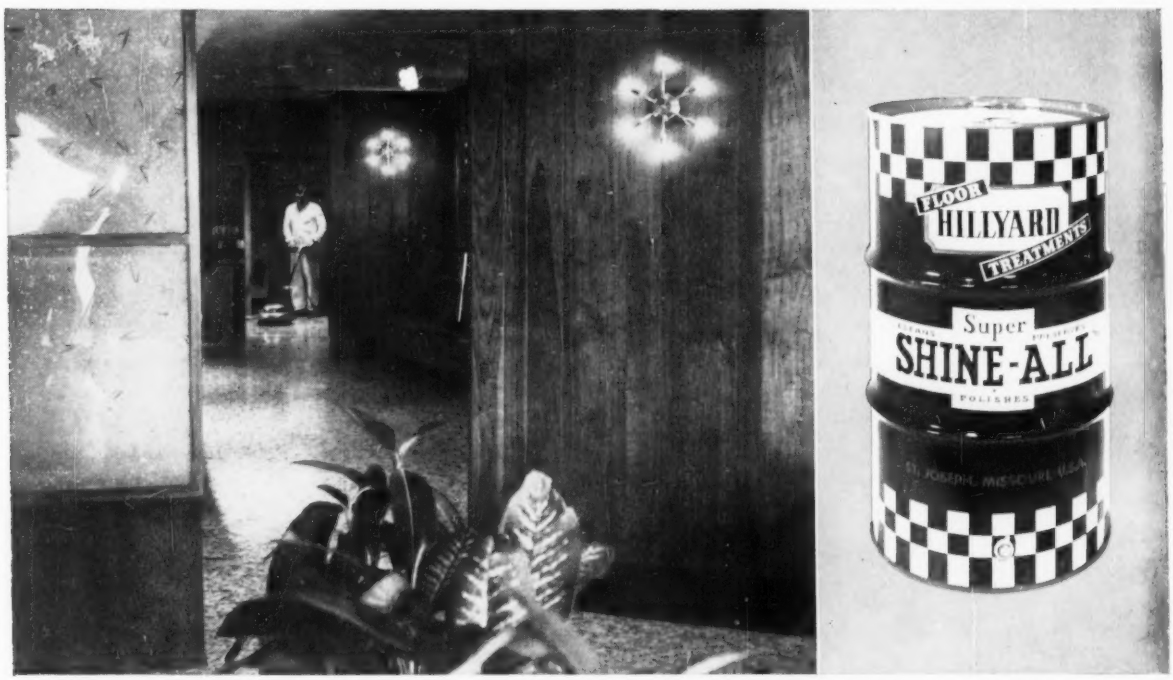

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NSBA REPORT

(Concluded from page 44)

Oliver J. Caldwell, and a host of others, including Dr. Conant, who has signally honored the NSBA by selecting the occasion of its 1959 Annual Convention for presenting the final report of his study of the American high school. ■

ASSOCIATION NEWS

ILLINOIS BOARDS MEET

A switch in public sentiment from calling for improvement in education simply for the purpose of overhauling Russia to "improvement in education so that we may be more truly American than we have ever been before" was cited by Benjamin C. Willis, Chicago superintendent of schools, as he keynoted the 44th annual conference of the Illinois Association of School Boards. Attendance at the meetings, held with the Illinois Association of School Administrators at Chicago's Hotel Sherman, November 23–25, was estimated at 2800. Joseph Ackerman, board president of the Elmhurst elementary schools, was elected president of the IASA for 1959.

NEW SCHOOL BOARDS GROUP

School officials from Buffalo, Rochester, Syracuse, and Yonkers — four of the New York's "big six" — formed an association of schools boards, defining fiscal independence as one of its main objectives. These districts, along with New York and Albany, are the only ones that are not fiscally independent in New York.

COMING CONVENTIONS

January 8–9. Tennessee School Boards Association, Noel & Maxwell House Hotel, Nashville, Tenn. Secretary: Joseph W. Goss, 129 Cordell Hull Bldg., Nashville, Tenn. Attendance: 500 to 750.

January 12–14. Minnesota School Boards Association, St. Paul Auditorium, Hotel Lowry, St. Paul, Minn. Secretary: W. A. Wettergren, Box 367, St. Peter, Minn. Attendance: 2500. Exhibits.

January 16–17. Arizona School Broad Association, Westward Ho Hotel, Phoenix, Ariz. Secretary: A. N. Gandrich, 4833 North 31, Phoenix, Ariz. Attendance: 250.

January 19–20. Nebraska State School Boards Association, Inc. Pershing Memorial Auditorium, Lincoln, Nebr. Secretary: Richard C. Brown, 1027 East Avenue, Holdnele, Nebr. Attendance: 600 to 700. Exhibits.

January 21–23. Wisconsin Association of School Boards, Milwaukee Auditorium, Milwaukee, Wis. Secretary: George Tipler, Box 163, Winneconne, Wis. Attendance: 1000. Exhibits.

February 3. Missouri School Boards Association, Jesse Auditorium, Columbia, Mo. Secretary: Ben A. Rogers, Eugene, Mo.

February 22–24. Louisiana School Boards Association, Monroe, La. Secretary: Fred G. Thatcher, Box 8986, University Station, Baton Rouge, La. Attendance: 500. Exhibits, educational only.

March 1–5. Association for Supervision and Curriculum Development, Cincinnati, Ohio, Netherland Hilton Hotel. Secretary: Rodney Tilliam, 1201 Sixteenth St., N.W., Washington 6, D. C. Exhibits.

March 14. New Mexico Association of School Boards, University of New Mexico, Albuquerque, N. M. Secretary: Frank Angel, Jr. Hodgen Hall, University of New Mexico, Albuquerque, N. M. Attendance: 350.

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NEW BOOKS

Possible Measures of the Adequacy of Teacher Supply and Demand

By Rima Evans. Paper, 13 pp. University of the State of New York, State Education Dept., Albany, N. Y.

The hue and cry of teacher shortages and sub-qualified teaching personnel in critical fields has resulted in this study of staff adequacy at all levels by the New York State Department. The study showed (1) that there is a real shortage of elementary teachers, but a surplus of secondary teachers; (2) that the fields of science and mathematics are getting a smaller and disproportionate number of teachers than are the other fields; (3) that teachers colleges in the state are graduating a smaller number of people trained to teach mathematics, industrial arts, trade subjects, and science than staffing patterns would suggest. The data points out that there is an 18 per cent excess of staff employed at the secondary level, compared with a 13 per cent shortage at the elementary level.

Policies and Procedures in Selection of Personnel for Administrative Positions

Paper, 23 pp. Circular No. 6, July, 1958. Research Division, National Education Association, Washington 6, D. C.

This bulletin, the result of a study of policies and practices in 68 school districts above 30,000 population, includes rulings or statements of policy outlining procedures or plans for selecting administrative personnel. Most of the districts require a master's degree for anyone entering an administrative or supervisory position. If a person has a degree and a number of credits toward a master's, he is acceptable as a candidate for promotion. Only a few systems set any limitations on age, but there is a tendency toward choosing young persons so that they may grow into their jobs. Maximum ages are 45 to 55. Nearly all systems require years of successful or outstanding teaching experience. A few require administrative experience before advancement to more responsible jobs.

SCHOOL FIRE SAFETY

Important books and pamphlets on school fire safety, which will be found specially pertinent to school officials, are listed below:

School Fire Safety. By N. E. Viles. Bulletin No. 13, 1951. Price, 20 cents. Superintendent of Documents, Government Printing Office, Washington 25, D. C.

School Fire Drills. By N. E. Viles. Pamphlet No. 103, 1948. Price, 10 cents. Superintendent of Documents, Government Printing Office, Washington 25, D. C.

Fire Safety for Junior High Schools. Edited by Mary M. Hayden and LuVerne C. Walker. National Education Association, Washington 6, D. C., 1950.

Fire Safe School Buildings. National Board of Fire Underwriters, 85 John St., New York 38, N. Y., 1954.

School Fires. National Fire Protection Association, 60 Batterymarch St., Boston 10, Mass.

Fire Prevention. Prepared under the direction of C. C. Crawford of the University of Southern California Curriculum Laboratory. Price, $1.50. International Association of Fire Chiefs, Hotel Martinique, Broadway at 32nd St., New York 1, N. Y.

Mathematics and Science Education in Public Schools

Compiled by J. Dan Hull, Seerley Reid, Paul Blackwood, Kenneth Brown, and Ellsworth Obourn. Paper, 97 pp., 65 cents. Superintendent of Documents, Government Printing Office, Washington 25, D. C.

This bulletin will assist school officials in developing guide lines for program appraisal and direction in mathematics and the sciences, and in evaluating proposals for changes in the school programs. Some attention is given to help through films, television, and records for adding to previous knowledge and for adding to the breadth of concepts.

Also Received

Administration and Organization of Guidance Programs

By Dean C. Andrew and Roy D. Willey. Cloth, 330 pp., $4.50. Harper Brothers, New York 16, N. Y.

A quotation from the authors' preface accurately states the purpose of this book:

"It is the purpose of this book to assist administrators and potential administrators of guidance programs in gaining insight into the role of guidance services, as these services should function in the total educational program, and to suggest principles and techniques that have proved useful in establishing and maintaining effective guidance programs. The textbook contains material suitable for a quick overview of the guidance services by administrators who are taking a course in guidance for the first time, as well as for those who desire to refresh their knowledge after a lapse of several years in formal guidance study. The book is designed for use as a text in a formal course in the administration and organization of guidance services, as a supplement for courses in educational administration, and as a basic reference in guidance workshops and conferences."

In the reviewer's judgment, the authors accomplished their purpose logically and clearly. They go from a definition of guidance to an analysis of its

(Concluded on page 50)

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HOW SAFE SHOULD A SCHOOLHOUSE BE?

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NEW BOOKS

(Concluded from page 48)

need, and a description of the guidance process. Then follow five chapters on the administrative principles, responsibilities, and procedures that apply to organizing and administering a guidance program. The last seven chapters are devoted to the specific guidance services which constitute a guidance program: the individual inventory service, the occupational information service, the counseling service, group guidance, placement and evaluation. The last chapter discusses the public relations aspect of a guidance program.

This overview of guidance and these specific suggestions for organizing a guidance program should prove helpful to all those who are responsible for guidance programs. Professionally trained guidance workers not engaged in administrative problems would not expect to find much that is new or interesting to them in such a book.—*J. P. Treacy*

Innovations in Elementary School Classroom Seating

By David C. Sanders. Cloth, 177 pp., $5. University of Texas, Austin, Tex.

This book presents a complete technical report of an extensive study of the effects of new types of classroom seating, designed and used in a way to best meet current class organization and teaching methods. The investigation was limited to second- and fifth-grade classes in two schools and control rooms were set up so that the comparisons would be accurate and valid.

The report evaluates the relative effectiveness of the special furniture designed to meet a work-center situation, with small study groups, audience and discussion groups, as against the older types of conventional furniture, particularly the widely used chair desks. The research led to a series of interesting findings. It was revealed that the instructional program, in harmony with modern educational theory, was more effective in classes equipped with especially designed furniture. The teachers in these rooms were able to use fewer and more positive control techniques. There was significantly less time spent each day in changing activities in classes using the experimental furniture than in classes using the conventional chair desks. More time could be devoted in the rooms using the new furniture to listening and discussion activities and greater pupil leadership was observed. More and greater varieties of instructional materials were used in the experimental classrooms, but no statistically significant differences were found in the mean achievement age of the pupils. No differences were noted in intra-class relationships of the pupils.

The new furniture was found to be particularly adequate for writing and drawing activities. It was indicated that the large rooms in which the experimental furniture was used could be reduced somewhat in size without affecting the efficiency of the classes. Finally, the children and the teachers both enjoyed the furniture and the custodians spent less time in cleaning the rooms than was needed for rooms with the conventional furniture.

The authors are very careful to suggest that the teachers must be educated to carry on the type of work for which the experimental furniture is especially adapted.

It is interesting to note that the entire undertaking was supported by the American Desk Manufacturing Company of Temple, Tex., as a means of making the furniture produced by this firm distinctly suited to the newer educational program of the schools.

Teaching in High School

By Hubert H. Mills and Harl R. Douglass. Cloth, 516 pp., $5.75. The Ronald Press Co., New York 10, N. Y.

This book is intended to help the high school teacher orient himself and achieve efficiency through better human relations with his students and the correct use of basic educational principles and practices.

MCHS Board Analyzes NEA Report

Paper, 16 pp. Missoula County High School Board of Trustees, Missoula, Mont.

This is a sharp reply to the critical report prepared by the NEA National Commission for the Defense of Democracy Through Education, on the salary difficulties of Missoula high school teachers in 1955-56.

Free and Inexpensive Learning Materials

Compiled under the direction of Henry Harap. Paper, 256 pp., $1.50. George Peabody College for Teachers, Nashville, Tenn.

The ninth annual edition of the booklet.

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Walt Disney Elementary School, Tullytown, Pennsylvania. Architect: John Carver, Philadelphia, Pennsylvania.

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PERSONAL NEWS

ARKANSAS

Clyde Mosier is the new superintendent at Patmos.

CALIFORNIA

Dr. Alton Scott, of South Pasadena, has assumed his duties as assistant superintendent in the Arcadia district.

Heber H. Holloway is the new acting superintendent in the Whittier union high school district.

Martin Morocco is the new superintendent in the Topanga district.

COLORADO

Wilson V. Mayfield has taken the superintendency at Branson.

DISTRICT OF COLUMBIA

Dr. Franklin Dunham, Chief of Radio-Television, U. S. Office of Education, was awarded the 1958 Citation of Merit by the National Association of Educational Broadcasters at its recent meeting in Omaha.

The National Education Association has appointed **Lyle W. Ashby** as its deputy executive secretary. Dr. Ashby has been with the NEA since 1928, serving as assistant executive secretary for educational services during the last three years.

GEORGIA

D. D. Morrison has succeeded R. W. Dent as superintendent at Pelham.

IDAHO

J. D. Powell has assumed his duties as superintendent in Middleton.

ILLINOIS

W. R. Pogue is the new superintendent at Rossville.

Leland Manske has taken the superintendency at Malta.

Louis Pistilli is the new superintendent at Rockdale.

Harold M. Kaiser has taken up his duties as superintendent at Granite City.

John C. Steuernagel is the new superintendent in Dist. 189, East St. Louis.

Robert Krebs, Mt. Vernon, Ill., board president and past president of the Illinois School Boards Association, was awarded the 1958 "School Board Member of the Year" citation of the Educational Council of 100, an organization of community leaders and school people working to improve education at all levels in southern Illinois.

R. C. Todd has entered upon his duties as superintendent at DuQuoin.

INDIANA

Henry Tobin, Jr., is the new superintendent in Williamsport.

John T. Gunning is the new assistant superintendent in Gary.

IOWA

Maurice Olsen has taken the superintendency at Moulton.

Donald Eden, of Brighton, has accepted the superintendency at Mechanicsville.

Jack B. Heifner is the new superintendent at Sutherland.

Jack E. Hoenshel has taken the superintendency of the Denmark school district, Denmark.

Robert Kistler is the new superintendent at Pleasant Plain.

KANSAS

Jeff Haney has accepted the superintendency at Madison.

Harold H. Williams has succeeded Harold Deever as superintendent at Larned.

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DEPARTMENTAL PLANNING

(Concluded from page 32)

all such enterprises, the dividing line between the actions is not as definite as indicated. Many actions start informally earlier; most of the planning procedures remain continuous throughout the entire planning period.

Procedures for Planning

The research of the chairman and the discussions of the members of the departmental staff are two basic procedures for departmental planning for future high schools. The report of the department to the high school principal should emphasize the ideals which grow out of the planning process in order to make a more significant contribution to American education.

It is important in such a long-range planning task to keep in proper focus and priority relationship the major areas of concern. The following six topics seem to be important for typical planning for new high schools:

1. *A co-operative approach.* Planning should be shared with others and appropriate procedures developed.
2. *The present high school situation.* The setting in terms of the community, the school system, the existent organization for secondary education, and the present departmental offerings should be clarified for planning purposes.
3. *Revised departmental program for the new high school.* The philosophical heart of the planning is the determination of the program content, organization, and co-ordination.
4. *Implications for staff members and their assignments.* The importance of the teacher as a person and his schedule of duties is basic to further planning.
5. *Facilities required for implementation of the program.* The vast accumulation of ideas for facilities becomes organized when they are evaluated in terms of the program and staff purposes.
6. *Implications for other schools.* The aftermath may involve a separated junior high school, a group of separate elementary schools or other situations; nevertheless, the organization of a new high school involves departmental planning for articulation with these other schools.

Departmental planning of the type here suggested, involving deep thought, co-operative effort, and time for crystallization is offered as one basic approach for planning new high schools. If the final report reflects the degree of concern the department has had for its future offerings, the people involved will have fulfilled their major roles prior to the actions to be taken by the administration, the architectural staff, the board of education, the state departments, and the community. ■

(For more information from advertisers, use the postcard on page 59)

THE SCHOOL SCENE

(Concluded from page 7)

we feel a long-range program is required," the chairman of the committee which studied the salary situation stated. Even "with starting salaries unchanged ($4,250 for B.A. degrees), the Cleveland system should be able to recruit and retain its share of top teachers," with the new plan specially attractive to experienced career teachers.

The plan also shifted increases from an annual to a biannual basis.

RUSSIAN EDUCATION CHANGES

While ten Russian educators and education officials began an extensive, five-week tour of American educational institutions, Tass, Soviet press agency, released details of its new educational school-work program which will send high school students into the fields and factories "to bring them closer to life." Students are to be turned out with a "many-sided education, well versed in the rudiments of science and fit at the same time for systematic labor."

EDUCATION EMPLOYEES

The United States Department of Labor reports that on September 1, 1958, the educational institutions of the states and local communities employed 2,583,100 persons. The clear payrolls were $931,500,000.

COLLEGE ENROLLMENTS

Fall enrollment of students in the nation's colleges and universities for the 1958-59 year reached the all-time high of 3,258,556, according to U. S. Commissioner of Education Lawrence Derthick. The current enrollment exceeded the previous record in 1957 by 190, 139 or 6.2 per cent.

The number of students enrolled for the first time rose to 781,075, or an increase of 7 per cent over 1957. The enrollees included 2,110,426 men and 1,148,130 women.

LAWSUIT SETTLED

Charles Hannan, a student in the Blue Island, Ill., community high school, has received $40,000 in settlement of a lawsuit against the school for injuries he received in a test tube explosion which permanently impaired his eyesight, when he was a freshman pupil in March, 1951. The explosion occurred as Hannan was conducting an experiment in the school chemical laboratory after class hours. The school and the chemistry instructor were charged with negligence because they permitted the student to work wihout supervision.

AWARDS FOR SCHOLARS

Honoring "brains along with brawn" is the new policy in a growing number of school districts this year. Among the reports:

- In Asbury Park, N. J., a high varsity "A" will be awarded to all students with a yearly average of 90 or higher. The letters, awarded to "varsity scholars," will be the same size as those awarded athletes and will have a white border and a gold lamp of knowledge.
- In Chattanooga, Tenn., Red Bank High school plans to honor students making all "A's" for a semester with letter jackets similar to those given athletes.

FOREIGN LANGUAGE STUDY

In the current stress for foreign language study, two recent experiments are noteworthy:

- In Monroe, Mich., 35 elementary children who had studied Spanish during the summer months *requested* an advanced level Spanish program for Saturday mornings. The instructional period, of one hour and twenty minutes, meets in groups of 12 to 15.
- And in Westport, Conn., 225 seventh- and eighth-grade students are giving up recess periods for an enriched study in French and Spanish on a completely voluntary basis with no credit offered.

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(For more information from advertisers, use the postcard on page 59)

News of Products for the Schools

HIGH-BAY LIGHTING FIXTURES

Interior lighting fixtures designed for gymnasiums and other large buildings needing concentrated lighting are manufactured by the Crouse-Hinds Co., Syracuse 1, N. Y. The high-

Brilliance Where Needed

bay units are especially useful for lighting boxing and wrestling rings or tennis courts. The Type MDS fixtures are available for 300-1500 watt incandescent or 400-watt mercury lamps. The units can be ordered with a separable or single piece head, wide angle reflector for low and medium mounting heights, or with concentrating reflector for high mounting and narrow areas. Type MDS fixtures are lightweight and easily assembled and wired.

(For Further Details Circle Index Code 0208)

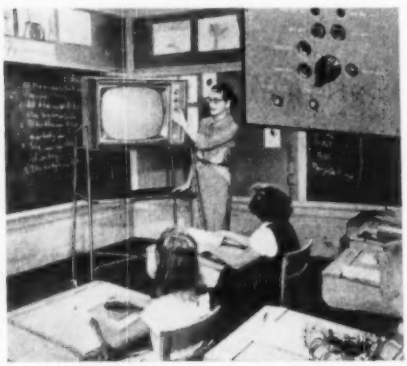
HEIGHT ADJUSTABLE FURNITURE

A quality line of school furniture that grows with the student is manufactured by Interstate Adjusteze Corp., Anaheim, Calif. The complete line, scaled from kindergarten to college, has chairs, desks, and activity tables in several styles. One style of desks and tables have heavy gauge, square tubular steel legs, calibrated for height adjustment with a patented steel brakeshoe that locks legs into place. Desk and seat tops are of hardwood plywood in a tan birch plastic finish. Heavy steel frames have baked enamel finish in beige, gray, or blue with coral book boxes. Chromeplated glides adjust to uneven floors. A line of posture chairs with sturdy tubular steel frames comes in three models from kindergarten to college size, each with a knob adjustment that can add up to 3 in. seating height. Send for a file illustrating the complete line.

(For Further Details Circle Index Code 0209)

MULTI-PURPOSE TV

Classroom 21, a new television receiver for classroom use, has been developed by Motorola, Inc., Chicago 51, Ill. When used in closed circuit systems, the set provides a high definition picture with detailed reproductions of laboratory experiments, microscope slides, and other invisible-to-the-naked-eye demonstrations. The receiver can be used either for closed-circuit broadcasts or regular channel viewing. A simple switch permits instant change-over. Special inputs on the set allow it to be used with a public-address system or a



Commercial or Educational TV

microphone. The face plate of the set is tinted, shatterproof, and reduces reflected glare. Over-all dimensions of the set are 19 by 28 by 17 inches. Available in charcoal or blond grained finishes with a vinyl dust cover. A TV stand with tilt control is an optional accessory.

(For Further Details Circle Index Code 0210)

FIREPROOF CEILING TILE

An incombustible acoustical ceiling tile has been introduced by the Celotex Corp., Chicago 3, Ill. Known as Supracoustic Panels, the tiles can be ordered in 2 by 2-ft. or 2 by 4-ft. sizes. Supracoustic panels are coated with a special elasticized white paint that is easily washed, yet retains its original whiteness and

Washable Acoustical Tile

sound absorbing quality. The panels have unusual pattern design, a result of textile-type spun glass fibers, presenting a pleasing appearance. They offer economical and durable installations.

(For Further Details Circle Index Code 0211)

WOOD SEAT CHAIR

Metal folding chairs with hardwood veneer seats are the newest addition to the line of folding chairs produced by Krueger Metal Products Co., Green Bay, Wis. Model No. 902-E features a tubular steel frame construction with a seven-ply $\frac{3}{16}$ in. thick hardwood veneer seat that is riveted securely to the frame. Other features of the chair include contour-shaped backrest, rigid cross braces, and nonmarring feet. More details available from the manufacturer.

(For Further Details Circle Index Code 0212)

ROLL-ON DESK COVER

A new slip-on plastic covering for desks has been manufactured by School-Crafters, Inc., North Adams, Mass. Called Desk-Kap, the sheets are tailor-made of Textolite. Application is facilitated by using tools and a special cement supplied by the maker. Send for price list from the manufacturer.

(For Further Details Circle Index Code 0213)

Colorful Playground Equipment

A NEW LOOK IN PLAYGROUND EQUIPMENT

A colorful line of playground equipment from Miracle Equipment Co., Grinnell, Iowa, inspires both safe, healthful exercise and imaginative play for youngsters. Primary grades will enjoy a bright multicolored Whirl, a standup merry-go-round so constructed that it whirls around without pushing. Swings have red-and-white candy-striped supports, with "slashproof" seats of rubber molded around a steel mesh core. Tiny tots will enjoy red basket seat swings with horses' heads sides in 3-D. Older children will like the curved two-level climber with free play area beneath the unit. One of the most colorful and imaginative units is the Miracle Jack 'N Jill (pictured) which combines two climbers, a ski slide and stairway, an optional and removable Fiberglas roof supported by four candy-striped poles. Side panels at the slide and stairway add more play possibilities. The company offers a playground planning service. Send for an illustrated 36-page catalog of this colorful, sturdy line.

(For Further Details Circle Index Code 0214)

(Concluded on page 58)

CORRESPONDING CODE INDEX NUMBERS TO BE ENCIRCLED CAN BE FOUND ON THE CARDS IN THE READER'S SERVICE SECTION

(For more information from advertisers, use the postcard on page 59)

News of Products . . .

(Concluded from page 56)

OUTDOOR INCINERATOR

A redesigned, 10 bushel outdoor incinerator for institutional use has been announced by Alsto Co., Cleveland 13, Ohio. The economical unit does not require installation of an auxiliary fuel unit. A scientific draft control decreases danger of fires and greatly reduces smoke and smell. Alsto Model C10 will burn damp, green, or dry refuse, and paper, food, or rags to a fine ash. It is constructed of aluminized steel with replaceable double panel construction, hinged loading hood, and a shovel-wide clean-out door. The C10 is 52 in. high by 35 in. square at the base. It has an 8-in. detachable ash pan base and grate. Shipped fully assembled.

Controls Smoke

(For Further Details Circle Index Code 0215)

CATALOGS & BULLETINS

A heavy-duty lamp that can be attached to radial saws, drill presses, shapers, lathes and other workshop tools to provide strong close-up light is described in a one-page bulletin from Rockwell Mfg. Co., Delta Power Tool Division, Pittsburgh 8, Pa.

(For Further Details Circle Index Code 0216)

A wealth of information on the design and use of laminated wood products is available to architects and builders in the 28-page catalog from Unit Structures, Inc., Peshtigo, Wis. The catalog is illustrated with many architectural details from schools, gymnasiums, and other community buildings.

(For Further Details Circle Index Code 0217)

Some five million children suffer from hearing impairments. In its booklet, "The Child on the Outside," the Beltone Hearing Aid Co., Chicago, points out some of the ways to detect hearing losses in children, including audiometer and audiometric tests. The 12-page booklet has a noncommercial approach that makes it especially suitable for use by PTA, school, or community groups interested in hearing conservation.

(For Further Details Circle Index Code 0218)

CORRESPONDING CODE INDEX NUMBERS TO BE ENCIRCLED CAN BE FOUND ON THE CARDS IN THE READER'S SERVICE SECTION

(For more information from advertisers, use the postcard on page 59)

READER'S SERVICE SECTION

INDEX TO SCHOOL EQUIPMENT

The index and digest of advertisements below will help you obtain free information, catalogs, and product literature from the advertisements and companies listed in the new products section. Merely encircle the code number assigned to each firm in the request form below, clip the form and mail it to THE AMERICAN SCHOOL BOARD JOURNAL. Your request will receive prompt attention.

For your copy of "Planning the High School Gymnasium" from your JOURNAL for October, 1958, please check the box on the post card at the right, fill in your name and address, and mail. No postage needed.

USE THESE CARDS

These cards are provided for the convenience of THE AMERICAN SCHOOL BOARD JOURNAL readers in requesting information on products, services, booklets, and catalogs offered by the advertisers in this issue.

THE AMERICAN SCHOOL BOARD JOURNAL
400 North Broadway, Milwaukee 1, Wis.

January, 1959

Please ask the manufacturers, whose code numbers I have encircled, to send me free information, catalogs or product literature as mentioned in this issue of the JOURNAL.

☐ Planning the High School Gymnasium

ADVERTISING INDEX

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NEWS OF PRODUCTS FOR THE SCHOOLS

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Also information on _____

Name _____

Title _____ School _____

City _____ Zone _____ State _____

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USE THESE CARDS

The cards below are postpaid for your convenience in requesting product information, catalogs, and literature from advertisers and firms listed in this issue.

READER'S SERVICE SECTION

(Continued)

Get them off to a faster start with modern ROYAL ELECTRICS

There's no doubt about it, the new Royal Electric is fast becoming a favorite typewriter for teaching beginners.

The keyboard is wonderfully easy to master. Fewer long drills and stroking exercises are necessary to attain proficiency.

Famous Magic® Margin makes margin setting faster. Royal's exclusive Twin-Pak® is the easiest of all typewriter ribbons to change.

For advanced students, too! A unique Touch Control® feature makes the transition from manual to electric surprisingly easy.

Then, too, all the Royal Electric controls are in the same familiar position as on most manual typewriters, including both the tabular and backspacing keys.

The great reliability of the Royal Electric of course means a minimum of interruptions for repairs. But a good thing to remember, when service is needed: Royal has more service points near you than any other typewriter manufacturer.

Keep enough new Royal Electrics on hand to offer both beginning and advanced students this valuable instruction. Get in touch with your Royal Representative and discuss the matter. He'll be happy to arrange a free demonstration and trial in your classroom or school office.

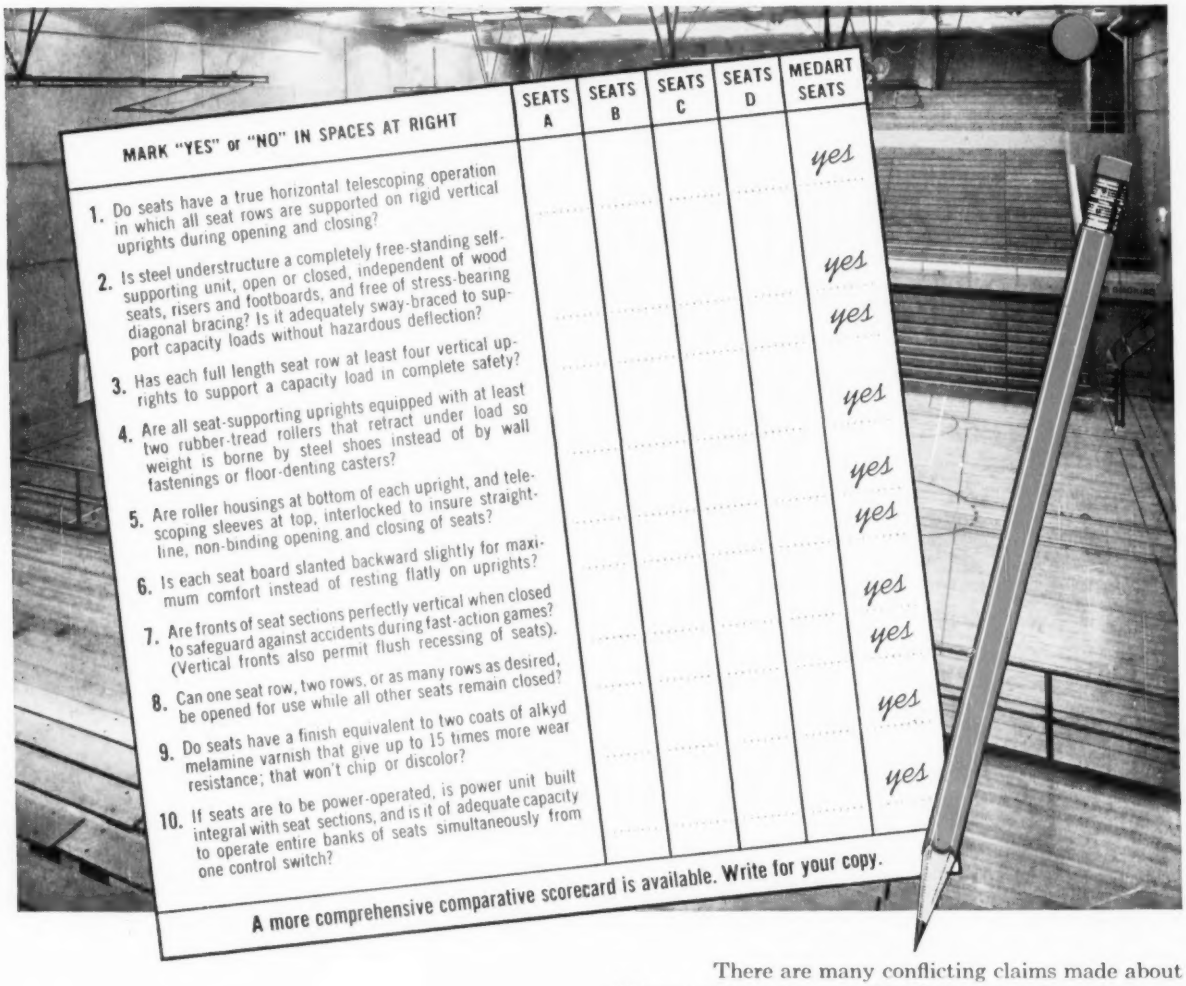
This is Twin-Pak®, Royal's exclusive quick-changing ribbon that fingers never touch.

ROYAL® *electric*

Product of Royal McBee Corporation, World's Largest Manufacturer of Typewriters.

THERE ARE MORE ROYAL TYPEWRITERS IN SCHOOL AND OFFICE USE THAN ANY OTHER MAKE.

What's the score on Gym Seats for that new school ?



MARK "YES" or "NO" IN SPACES AT RIGHT	SEATS A	SEATS B	SEATS C	SEATS D	MEDART SEATS
1. Do seats have a true horizontal telescoping operation in which all seat rows are supported on rigid vertical uprights during opening and closing?					yes
2. Is steel understructure a completely free-standing self-supporting unit, open or closed, independent of wood seats, risers and footboards, and free of stress-bearing diagonal bracing? Is it adequately sway-braced to support capacity loads without hazardous deflection?					yes
3. Has each full length seat row at least four vertical uprights to support a capacity load in complete safety?					yes
4. Are all seat-supporting uprights equipped with at least two rubber-tread rollers that retract under load so weight is borne by steel shoes instead of by wall fastenings or floor-denting casters?					yes
5. Are roller housings at bottom of each upright, and telescoping sleeves at top, interlocked to insure straight-line, non-binding opening and closing of seats?					yes
6. Is each seat board slanted backward slightly for maximum comfort instead of resting flatly on uprights?					yes
7. Are fronts of seat sections perfectly vertical when closed to safeguard against accidents during fast-action games? (Vertical fronts also permit flush recessing of seats).					yes
8. Can one seat row, two rows, or as many rows as desired, be opened for use while all other seats remain closed?					yes
9. Do seats have a finish equivalent to two coats of alkyd melamine varnish that give up to 15 times more wear resistance; that won't chip or discolor?					yes
10. If seats are to be power-operated, is power unit built integral with seat sections, and is it of adequate capacity to operate entire banks of seats simultaneously from one control switch?					yes

A more comprehensive comparative scorecard is available. Write for your copy.

There are many conflicting claims made about different makes of retractable, folding or telescoping gym seats. This "scorecard" will help you get the facts straight.

Additional factors that should be considered are the engineering experience of the manufacturer—approval among architects, schools and colleges—cost and frequency of maintenance as well as availability of service—durability (maximum service life).

YOU make the comparison before deciding, as thousands of other school officials and architects have done. *Ask for complete catalog.*

Long Beach City College Gymnasium
Long Beach, California

MEDART
TELESCOPIC GYM SEATS

SPECIFY the best, then INSIST on it!

SEE OUR CATALOG IN SWEETS

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